
The future of interactive entertainment
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EDGE
Sony ■ Sega ■ Nintendo ■ 3DO ■ PC ■ Amiga ■ Atari ■ SNK ■ Arcade ■ NEC ■ CD-i
3DO:
Edge meets Trip Hawkins and the creators of M2
Fade To Black:
Delphine's 3D world beater
Issue twenty-six
26
This month Edge judges Fade To Black – Delphine's long-awaited sequel to its seminal action adventure Flashback. Combining fast 3D and an engrossing storyline it's undoubtedly one of this year's best PC games. Plus, Edge visits 3DO's Californian headquarters to see the latest software and to get the full lowdown on M2...
Voted Magazine of the year
Industry awards
Future Publishing





Bridging the next generation gap

This month sees the arrival of the Sony PlayStation in the US and UK. From Edge's first news of the machine back in issue four to its launch in Japan late last year, it has been a journey that Edge has followed every step of the way.

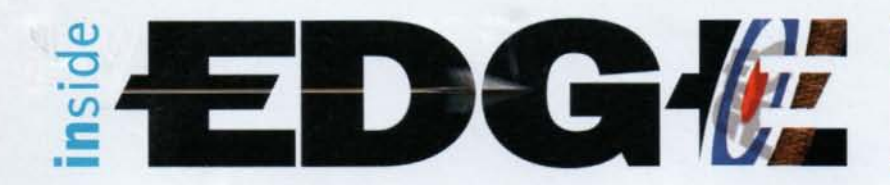
For Sony, the PlayStation's arrival marks the second stage of its commitment to its most important consumer electronics product of the decade. They have already demonstrated their ability to compete with their more experienced rivals.

Sega, on the other hand, have a head start although sales of the PlayStation in its first weekend in the UK and US have already allegedly overtaken the combined number of Saturns. What Sega does have is a reputation for great arcade games, and so far, Sony's home-grown efforts have done little to instill confidence in its home-grown outfit.

The unknown quantity remains Nintendo and the Ultra 64. Whether brand loyalty is as strong in the console market as in the computer arena is hard to figure. But consumers are soon going to be in danger of being confronted by several broadly similar systems, with increasingly powerful machines from 3DO and others on the way.

While the games industry has always grown on the back of upgrades, a situation like this has not existed since the early days. Whether, as Trip Hawkins believes, there is room for four or five players each with broadly comparable market shares remains to be seen. What the reaction is from companies used to having things their own way should be interesting. What the reaction is from consumers unused to paying several hundred pounds for a games platform will be even more so.

The **future** is almost here...







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Cover

Cover image: *Fade to Black* courtesy of EA/Delphine.





insideview

6 News





Siggraph Building (left), **ECTS PlayStation Stand** (right) and **DVD Digital Disc** (top right)

21 Prescreen




Quake (left) and **Mario RPG**

62 Testscreen



Yoshi's Island (left) and **Fade To Black**




92 Phil Harrison



Photography: Jude Edginton



The latest **news** from the world of interactive entertainment

ECTS Autumn Trade Event raises the Flag

New formats at the ECTS, but old favourites weren't forgotten

The European game industry's bi-annual trade bash took place in mid-September at Olympia in London and gave the industry its first proper taste of what's to come in the following few months.

As with the Spring event, Sony's PlayStation dominated with an enormous stand covering one end of the hall, and the full range of UK PAL PlayStation games on display amounting to 45 from Sony alone.

A particular point of interest was the debut of the PlayStation version of id software's *Doom*, which looked faster than the original PC versions. Jay Wilbur from id was also on hand to demonstrate new title, *Quake* (more on *Quake* on page 22), for the PC.

Sega once again shunned the show proper and laid on a bus to their nearby European Headquarters, where the emphasis was firmly on the impressive-looking *Virtua Fighter 2* and *Sega Rally* for the Saturn. Sega claim *Virtua Fighter 2* runs at a smooth 60 frames per second, an accurate claim from what **Edge** has seen.

Acclaim looked happy to be in the 16bit world as their ECTS line-up included *Batman Forever* and *Mortal Kombat 3*. They emphasised their commitment to PlayStation and Saturn as well, with *Alien Trilogy* available for both platforms around Christmas.

After a recent tricky trading period, Virgin were looking to bounce back with



The bi-annual European Computer Trade Show at Olympia in London attracted developers on every games format in existence

an innovative cinema-inspired stand and a games catalogue including *Cyberia 2*, *Heart of Darkness* and *Rebel Assault 2* on CD-ROM. The 16bit consoles saw *Earthworm Jim 2* and *Cool Spot 3* while the PlayStation has *Agile Warrior* to look forward to.

Electronic Arts had a strong line-up with *FIFA 96* (all formats) plus PlayStation conversions of *Madden 96*, *Wing Commander III*, *Theme Park*, *Hi-Octane* and *PGA Tour 96*.

EA's eagerly-awaited $10 million development *Wing Commander IV* received a great deal of interest as did →



The PlayStation's massive stand, occupying one end of the arena, hit home the message to rivals and sceptics: Sony are here and here for good





The 3DO company had some reasonable software on display, but gossip surrounding their new M2 (page 52) and a possible buy-out were of more interest

→ *Crusader: No Remorse*, both titles for the PC CD-ROM.

A 3DO company looking in danger of being squeezed by Sega and Sony was looking to reassure with its message, 'Don't sell a dodo, sell 3DO'. Emphasising 3DO's upgradability with M2 seems like one of the few options the firm has at the moment, although it is unlikely this will please consumers already reeling over the proliferating next generation vapourware market.

Rumours continue to circulate around possible 3DO buy-outs or licensing moves involving the likes of Sega and Matsushita. All parties remained quiet about possible moves.

Mindscape looked to Microsoft's *Windows 95* for its inspiration with the 90,000 selling *Al Unser Junior*. Another 13 *Win 95* titles are slated for the next four months, including *Su27 Flanker*.

After Nintendo's UK restructuring, its show presence was limited to just a few staff from its new distributor, THE Games. As a result, news on upcoming titles and the Ultra 64 was muted, although *Killer Instinct* (SNES) and *Diddy's Kong Quest* were on show.

Probably the biggest exhibitor of the show was Ocean's demonstration stand-cum-bar, which helped attract people to the likes of *Worms* (all formats), the highly anticipated *TFX: EF2000* combat sim, the result of the *Waterworld* license, and *Doom* for the SNES.

Perhaps the real message from this ECTS is that the corporatising of the games industry is nearly complete. Most smaller publishing houses have now been swallowed up or have cut deals with larger ones. The next generation appears to have marked more than just a shift from 16 to 32bit.

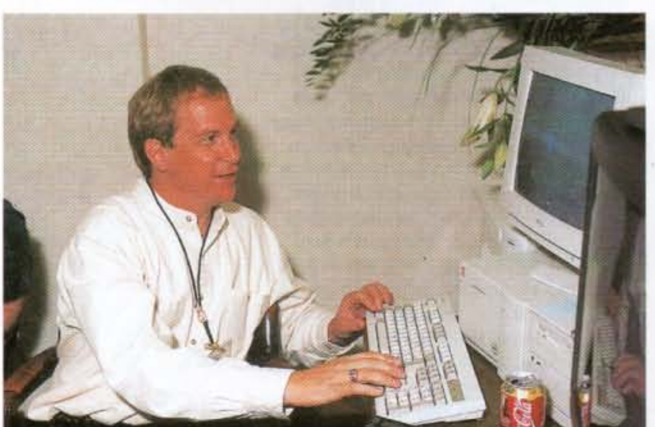
Who is it?

For years, this man ruled the Japanese videogame industry. His company – which started life in 1955 producing coin-operated kids' rides – dominated the market thanks to a cute coin-op character. He died in 1989



The impressive Virgin stand took the world of cinema as its theme. Visitors were greeted with themed rooms, free Virgin Cola and vodka, and a dirty old man doing the rounds









id software's Jay Wilbur and Mike Wilson (top left) demonstrated *Quake*, their new *Doom*-style romp featuring a fundamentally improved 3D engine. For more on *Quake* see page 22



Nvidia brings Saturn to PC

A new PC graphics chip is set to outclass the consoles

it is...

Masaya Nakamura, founder of Namco (see Edge 8). *Pac Man* made Nakamura the most powerful man in the Japanese coin-op industry – a status he lost to Hiroshi Yamauchi, head of Nintendo

*n*VIDIA

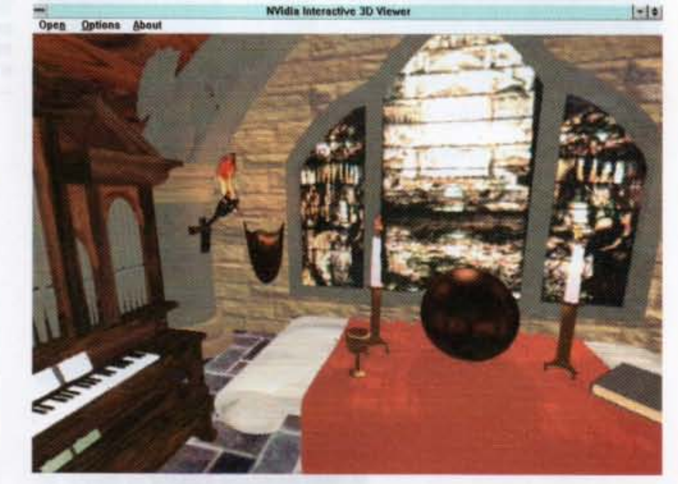
If their moniker was unfamiliar yesterday, multimedia chip maker Nvidia made a steep rise on the name-recognition charts by signing an exclusive agreement with Sega of America to port key Saturn games to Nvidia chip-equipped Pentium machines. In penning the deal, for which the games maker is now developing high-resolution PC versions of *Virtua Fighter* and *Panzer Dragoon*, Sega have raised questions about both their alliance with Microsoft and the future of their Saturn platform.



The Nvidia graphics chip supports a port for joysticks and joypads

Nvidia's new chip, dubbed the NV1 Multimedia Accelerator, combines wavetable audio and improved video playback performance with a hardware texture-mapping and geometry engine. Paramount in the chip's feature list is a new quadratic texture mapping (QTM) option which allows developers to wrap bitmapped images around curves and spheres. Previously, developers were forced to simulate rounded shapes by devoting hundreds of individual polygons to create a structure that looked close enough to a curve. The QTM, or as Nvidia calls it, 'Consumer 3D,' makes sphere calculation a comparatively quick and easy processing task.

This square bitmap has been curved using Nvidia's QTM technology



The process begins with any bitmap up to 256 pixels long and 30bits of colour. The chip attaches nine control points to the flat artwork: at corners, halfway along each edge and in the centre. When the points are moved in 3D space, the bitmap is deformed along quadratic curves. You can make the picture look like rubber paper hit by a ball, or even a pretzel shape. Everything happens almost instantly, and the chip can handle large numbers of texture-mapping tasks at once.

Diamond Multimedia Inc., based in San Jose, California, is already building chip-based cards. According to Diamond's Martin Mulligan, the retail version will be called the Diamond Edge 3D Multimedia Accelerator, selling at around £163 ($250): 'It'll be taken up by the power games players to begin with. There will be five bundled games in the retail version.' Diamond's card replaces a PC's sound and video cards, and also supports an enhanced games port for joysticks, reducing demands on the CPU. Small but innovative PC supplier Redbox is one of the first to announce it will be fitting the OEM version of the card into a PC.

One of the pack-in games will be a version of Nascar Racing from Papyrus. Papyrus vice president, David →



With the new chip there will no longer be the need for complex 'stepped' curved polygons. The graphics card does a lot of the hard work for you

Microsoft on the Box

Microsoft has said it will now be offering Microsoft Interactive Television (MITV) for an aeroplane's in-flight entertainment system. MITV is Microsoft's general platform for interactive entertainment.

→ Kaemmer, beamed enthusiastically, 'the Nvidia card is exciting. It enables us to write fast, hi-res games. We've ported *Nascar Racing* to it and in the fall we will have *Indy Car 2* running.'

But Sega of America's involvement in the project is the curious part, given that Nvidia's hardware environment is incompatible with Microsoft's Game Software Developers Kit (Game SDK), rendering the product unusable as a *Windows 95* graphics accelerator. For their part, Sega is coding *Virtua Fighter* and *Panzer Dragoon* around the board's QTM processing, instead of using the maths engine to calculate standard triangles. The obvious question: why would Sega opt to support a PC board which not only dodges Microsoft's standard-in-waiting but also spotlights features they haven't even used in their arcade hardware?

Perhaps Sega has plans to incorporate quadratic maths processing in future Model 3 arcade games, but if so, they run the risk of making the Saturn seem even more antiquated than it does today. In addition, the Nvidia processor easily matches or outperforms the Saturn in all areas, which means that PC owners will be enjoying higher-resolution and aesthetically superior versions of select Sega games only a few months later than console owners get them. Their snub of the Games SDK for 3-D games follows an earlier Sega announcement that Sega-CD titles *Sonic CD* and *Ecco the Dolphin CD* would be coded around an Intel emulation standard rather than using Microsoft code. The Nvidia announcement also comes after Sega of America CEO Tom Kalinske acknowledged in May that sales of PC hit titles are only one-tenth to one-fifth those of popular console games.

The Nvidia chip can handle up to 32 separate digital sound inputs at once, mixing in hardware. It also accelerates digitised video, treating it as a series of bitmaps to be mapped on to QTM-generated curves.

Now that Sega has stepped into Nvidia's corner, Saturn owners, PC owners and Microsoft executives must all be wondering what's next. Will the Saturn become a dumping ground for poor translations of Sega games, will PC players receive a tiny subset of Sega's top software, or will Sega warmly embrace both Microsoft and the PC industry? The answer is largely dependent on the success of a few mathematical formulas and the companies that decide to use them. **E**




Sega and Nvidia have signed a deal to release Saturn games on the PC

Advertainment

Edge's showcase for the worldwide recognition of videogame advertising. This month: the Saturn campaign.

Company: **Sega**
Product: **Saturn**
Date: **Now showing**
Origin: **USA**


1

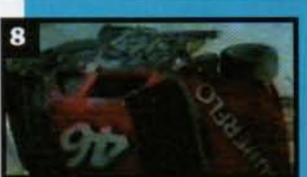
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11



'Frenetic' is the word to describe this advert.
1 The scene opens with a swift cut to a futuristic landscape. 2 'Who is this superhero?' 3 Why, it's a cool racing driver. 4 Be in no doubt that Sega want to associate the Saturn with speed. 5 What's going on is this: the cool racing driver is the gamesplayer's representation in the new ultra-realistic titles the Saturn is going to deliver. This frame is the gamesplayer's eyes being sucked out in excitement. 6 Faster! 7 The car enters a corner too sharply and 8 tumbles 9 The driver is rushed to hospital... 10 But naturally, he's all right. 11 Thank goodness it was just a game

Top graphics come home at **Siggraph**

LA's Siggraph 95 declared top graphics to be an affordable asset

Looming out of the sulphurous pit that constitutes downtown LA is the Los Angeles Convention Centre. Its 200 foot high glassy entrance hall towers above the suburban drabness around it. The miles of darkened halls within play host to every manner of specialised fanaticism throughout the year, but for five days in August all comers are drawn into the world of computer graphics.

Siggraph 95 proved conclusively that the highest quality graphics are now an affordable mass-market commodity. The niche market position that Suns, SGIs and DEC Alphas have occupied for years is full to bursting point. As the synergy of game and film companies draws ever nearer, these hugely powerful machines are finding their way into an increasing number of offices. The 38,661 attendees were twice as many as last year, the international guests rose by nearly 40% to 6,000 and the exhibitors had the products to satisfy this burgeoning demand.

The Centre's 200 foot high entrance. Classy

Silicon Graphics – predictably – had the largest stand. Its corporate presence has risen dramatically since the merger with what is now Alias|Wavefront. It was there in the main to announce its vision of the future: Project Maya. In what will be one of the major initiatives of the next few years, SGI's aim is to re-invent computer art, integrating all the disparate standards and returning artists to a natural environment. Rather than struggle with interfaces and mice the artist will be able to draw naturally and use the computer as an accessory.

The key to this quest will be Alias|Wavefront, who can now fully capitalise on the relationship with Silicon Graphics. Crowds of gawping people watched as yet another stunning demo passed by.



Silicon Graphics' vision for computer art – no mice, no technics, only natural media



Home for 38,000 Siggraph 95 attendees was the LA Convention Centre

Silicon Graphics' Ultra 64 partner Nintendo was also there by proxy. A completed Ultra 64 motherboard running a smooth flight sim demo was on display at NEC's booth, whose involvement is linked to the Rambus memory subsystem within the machine. Square was also present under the auspices of an artists' recruitment drive, but of more interest to Edge was the *Final Fantasy* rolling video. The typically well-designed characters were hopefully a taste of what's to come.

Representing living room hardware were four PlayStations and several 3DO's. The PlayStations running *Wipeout* and *Toh Shin Den* attracted interest on the Sony stand. And lurking in the Interactive Communities section were the 3DOs. A lone gamer was attempting to work out if *Ice Breaker* was a sick joke or not. It is.

High-end arcade companies fought it out to win the title of the best IG. Digital's new AlphaStation was operating with Evans & Sutherland's →





Silicon Graphics are well-known for their graphics stations and Alias|Wavefront is providing another way forward

Data stream

Sega's marketing budget for 1993: **£65 million**
Number of Mega Drives sold in the US in 1993: **5,900,000**
Sales of Atari's Jaguar in just two US cities – New York and San Francisco – before Christmas: **27,000**
Increase in sales of Electronic Arts' games in Japan from 1993-1994: **140%**
Predicted total number of videogame carts to be sold in the US in 1994: **112,000,000**
Electronic Arts' global sales figure year ending March 1993: **$298.4**
Electronic Arts' global sales figure year ending March 1994: **$418.3**
Amount UK business Pearson paid for US entertainment software firm, The Software Toolworks: **£310 million**
Estimated cost to industry of software piracy per year: **$1,640 million**
Drop in sales felt by Nintendo Germany during 1993: **15%** (Dropping from Dm800 million (£320m) to around Dm680 million (£275m))
The Rhino Group – holding company for the Future Zone retail chain – turnover for 1992: **£2.03 million**
Rhino Group Turnover for 1993: **£21.7 million**
Total amount Anco spent advertising *Kick Off 3* in the UK: **£200,000**
Total amount spent on marketing *Mortal Kombat* in the UK: **£2.2 million**
Activision's profit in 1992: **$118,000**
Activision's profit in 1993: **$483,000**
Worldwide unit sales of Philips' CD-i at the end of 1993: **300,000**









The rapid move of top-of-the-range computer graphics into the home created much of the interest at this year's Siggraph show

→ Freedom Series IGs to great effect. The large-tiered stand enabled people to play and race together, although it's unlikely that you'll ever see one in your local Quasar. More realistic a proposition is VWE's *BattleTech* multiplayer game. The sharp images and smooth action will make it worth a spin in London's *Battletech* centre.

Motion Capture was a fast-growing exhibitor fields, providing an ideal stage for companies to show off. Motion Analysis's optical system was given a work out every half hour before an interested crowd. The technology is already relatively mainstream. Quality magnetic systems like Ascension's Flock of Birds can only accelerate this widespread acceptance.

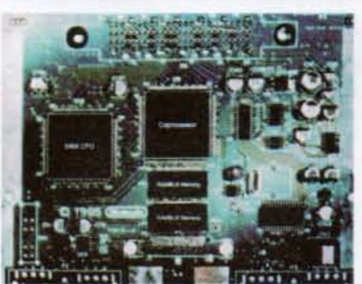
But perhaps the biggest new entrant to Siggraph was the PC. Although 3DStudio has been holding the fort for years, this was by far the PC's biggest show. Autodesk unveiled its latest version of 3DStudio but the PC rendering scene now includes SoftImage. If you can't draw, or don't have the time, Viewpoint DataLabs have the answer. Specialising in modelling objects for clients, the company's database now stretches to thousands of objects. During Edge's visit, an Origin programmer was shopping for a new spaceship.

3D accelerator cards were also popular. The Microsoft stand was showing off Creative Labs' new 3D Blaster card for the first time. Creative has struck a deal with 3DLabs, manufacturers of the GLINT chip [see Edge 15] to try and establish a PC graphics accelerator standard. The software support appears to be there and the demos were impressive.

Virtual Reality isn't the buzzword it once was but there was still a wide selection of helmets, etc to stick your head. The new Web authoring language was on display at IBM's PowerPC-packed stand. The Virtual Reality Modelling Language (VRML) allows Netscape users to visualise geometric shapes in 3D.

But the highlight of the show was the Electronic Theatre – a collection of 75 pre-rendered animations from the bizarre to the awe-inspiring. Those who said that computer graphics could never compete with cel art were forced to eat their words. In just 10 years electronic visualisation has progressed from crude 2D sprites to creating entire films from 0s and 1s. Where will it be in another 10?







It's all in the hardware these days with alliances between all the big names starting to pay dividends

What is it?

Started by Nolan Bushnell, it almost single-handedly invented the videogame and helped make a $3 bilion industry in the late 70s. It sold millions of machines and carts and looked all set to take over the world...





Windows 95 lives up to hype

As Windows 95 hits the shelves, what does it offer the games player?



it is...

Nolan Bushnell's company Atari. But by 1983 the industry had all but disappeared. Atari made six million ET carts... and then buried the lot in the desert. The company lost $300 million in a year

Sierra shows voice-activated CD

Forgetting which key to press in the heat of battle could be a thing of the past, thanks to Sierra On-line's new CD title *Command: Aces of the Deep*. Instead of hitting the fire button, just shout the word instead. No word yet on what happens if you use less savoury language.

At last it's here, and, pretty well, it lives up to all of the promises Microsoft have been making over the last year. *Windows 95*, the new operating system for PCs featuring 32bit data processing, multi-threading and multitasking (which means it'll run lots of things at once without slowing down too much), has already made a considerable splash with PC owners, game players and otherwise. Four million copies were sold in North America alone, in a mere four days. Was the marketing campaign all hype? Or is the operating system for the middle-nineties really what we've all been waiting for?

The marketing campaign certainly worked – the thing's been selling in droves, with some purchasers openly admitting that they didn't really know why they should be buying it, just that 'they should'. As for the ideal operating system? Well, it's certainly better than anything else PC owners would have come across thus far – it's fast, providing you're running it on a suitably configured machine (a decent 486 platform with a minimum of 8Mb of memory), and it does the business when running 32-bits apps.

And that, for the most part these days, means games. With an increasing number of games running in 32-bit protected mode (*Doom*, *Flight Unlimited* and anything else which flashes up the magic DOS4GW string as it loads), it's about time that an operating system can run them in their natural environment, instead of on top of limiting 16-bit operating code.

Windows 95 can enable these games to run faster, in terms of data processing, and even introduce acceleration techniques usually limited to the *Windows* environment. By running games through *Windows 95*, the acceleration chips mounted on the latest PCI and VL-Bus video cards can speed up game graphics – previously one of the PC's failings.

Games which are designed to run under *Windows 95* can be optimised to take advantage of acceleration hardware – faster blitting, polygon texturing and multiple layers of parallax is now possible. But, unfortunately, until the number of games which are custom written for the operating system appear, we're stuck with plenty of titles running using 16-bit code, and it's here where *Windows 95* has problems.

A number of games won't run under the native *Windows 95* environment, requiring a DOS mode where 16bit code is at home. Although this is acceptable – the games run just as they previously did – they can't take advantage of the memory management and acceleration which *Windows 95* affords, an irritation when used to the new features.

A number of games won't run under the native *Windows 95* environment, requiring a DOS mode

But, that said, it's a worthwhile upgrade for any PC games player – you don't lose anything by upgrading, and custom-written or 32bit games have a lot to gain.



***Windows 95* is the most hyped computer product of all time. Many purchasers could not say why they needed it, they just bought it**

Philips calls for **DVD** ceasefire

Major players in the war for the Digital Video Disc standard get ready to start talks

The first breakthrough in the war for the future of the Digital Video Disc (DVD) standard may be imminent. The two contenders for the DVD format, Philips and Sony with the Multimedia CD (MMCD) and Time Warner, Toshiba and Matsushita with the Super-Density CD, seem ready to begin talking. Henk Bodt, vice president of Philips Electronics, announced recently that he had contacted the SD camp to suggest talks. 'Everything is up for negotiation,' he said in a statement. Warren Lieberfarb, President of Warner Home Video, replied that he agrees the most important aspect of SD technology is 'a single format'. On this point, the industry seems unanimous – but deciding just who creates that format won't be easy.

Will Super-Density CD win the war for the DVD standard, or will it lose out to MMCD?

While both MMCD and SD were originally designed as a replacement for the pre-recorded video cassette, it is the computing industry that seems to be banging some sense into the opposing companies' heads.

The five leading computer companies – IBM, Apple, Compaq, HP and Microsoft – formed an ad-hoc grouping in April to put together the industry's requirements for DVD.

The following points were agreed:

- DVD must be a single standard for TV and computer
- There must be backward read compatibility with existing discs and forward compatibility with future read/write discs
- It must use a single file system for all applications
- The system must be low cost
- Discs must not use disc caddies
- It must provide reliable data storage
- Discs must have a high capacity, with the ability to be updated for multiple layer technology and shorter wavelength laser technology when that becomes economic
- DVD must offer high performance for sequential files (such as movies) and non sequential files (computer data and games).

In August, the group put out a press release saying that both technologies met *almost* all of their requirements, except in a couple of technical areas. The release said: 'To meet the needs of computer-based applications, both MMCD and SD format specifications need further definition in two areas; read/write applications and cross-platform interchange compatibility.'

But, more importantly, the release also pointed out: 'As there are still two formats instead of a single unified proposal, the first of the experts' recommendations – that there be only one format – remains unfulfilled.'



This Philips Digital Video Disc player could soon be obsolete if the Super-Density CD becomes the recognised norm

Until now neither side has been willing to compromise – the two rival camps even disagree over the timescale of introducing their respective systems. The SD camp has been adamant that they want to launch in the middle of next year. The MMCD side say they want to launch before Christmas, and there are now rumours that they plan to launch first in Japan in late 1996 and then the rest of the world in 1997.

One thing is certain: there are some very serious negotiations still to be completed. And that all important single DVD format is likely to take many months to arrive.

Where is it?

This country has over 40 different magazines dedicated to videogames on consoles and computers. More than a million copies are sold every single month, with a pass-on rate of between two and three people for each mag



Saturn goes on Line

Sega are to introduce a modem and Internet software for the Saturn. Expected to be launched next spring, the hardware and software is forecast to cost ¥15,000. Although there is no word on the Internet browser software to be chosen as yet, Edge has learned that it will be designed for the beginner, or people who will 'enjoy using the Internet in your house'. This follows similar plans for the 3DO.

Philips enters the World Wide Web

Internet access from your TV is soon to be reality on Philips' CD-i

it is...

Surprisingly, Britain. With a population of roughly one-fifth the size of America's, the UK manages to sustain more videogames magazines than its transatlantic counterpart, which manages less than half

Given that the World Wide Web is about easy-to-navigate, pretty pages, it is a bit odd that no one has brought it to the TV. Until now.

The trusty old CD-i player, already a games machine, education machine, film player, audio CD player and much more, has now become an internet access point as well.

To get this new service up and running Philips has established a new company called CD Online – the same name as the service.

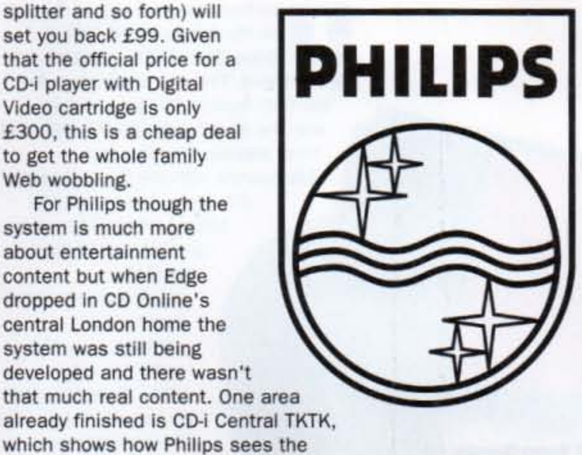
This is the deal: every three months CD Online will issue a new disc. This



The new CD Online service for Philips' CD-i machines will bring Internet Web pages to the home, and hopefully boost sales of the machine

will contain the Web browser and other access software along with content. This is linked to information on CD Online's home page or on other locations. For example, the disc could contain a music video clip. The customer could click on a button and the system would connect to an HMV page, register a request for the CD or a Ticket Master page and request availability of concert tickets.

The service costs £11.99 per month and the start-up kit (modem, cables, splitter and so forth) will set you back £99. Given that the official price for a CD-i player with Digital Video cartridge is only £300, this is a cheap deal to get the whole family Web wobbling.



For Philips though the system is much more about entertainment content but when Edge dropped in CD Online's central London home the system was still being developed and there wasn't that much real content. One area already finished is CD-i Central TKTK, which shows how Philips sees the system developing.

CD-i Central is all about CD-i – both hardware and software. Presumably Philips is pushing hardest the CD Online discs which include video. A customer wanting to buy a product will click on the right part of the screen and the system will connect to Philips' server and access the latest price information. What it will not do is allow the customer to place the order. However, theoretically, the system could access Philips' dealer database and, given it knows the Postcode where the player is, it could list the nearest dealers. The company says that type of location-based service will not be part of the initial offering.

With CD Online being a secure(ish) closed system, Philips is encouraging online shopping on the service but it was not prepared to detail its discussions with retailers for us.

Philips wrote its own Web browser for the CD Online service, presenting Web information in an acceptable way on the low resolution TV screen. Text is well presented and the basic graphics come over well but high resolution images are handled less well. Philips says it still has work to do on this. However even if the implementation of the Web browser is not perfect by the launch data, Philips is not too worried as the next disc, due out three months after launch will contain a new browser. E



Portable Mega Drive for the USA

This latest picture of the Nomad portable Mega Drive confirms the rumours of this machine's projected Christmas US release date. It is expected to cost $200 which will buy a full colour screen plus backwards-compatibility with the entire Mega Drive library. The Nomad is, however, not yet confirmed for a UK release.

3D rife at JAMMA





Sega's *Manx T.T.* (top) and *Fighting Vipers* (middle). A *Soul Edge* axeman (bottom)

The Amusement Machine Show (the JAMMA show) is the Japanese coin-op industry's annual celebration of the latest in arcade technology. The 33rd show took place in Chiba, Tokyo, in September and around 70 companies demonstrated over 3000 machines.

Unsurprisingly, hot favourites Sega and Namco showed a range of new 3D games. Most spectacular was Sega's new motorbike racing game, *Manx T.T.* – developed by *Sega Rally* creators, AM3. Despite being just 20% complete, this impressive Model 2 game drew the crowds and outshined Namco's more recently released *Cyber Cycles*. Unlike the Namco game, *Manx T.T.* doesn't allow the player's feet to touch the floor – the player has to use their body weight to lean around bends.

Sega previewed another Model 2-powered fighting game, AM2's *Fighting Vipers* (see page 39). Despite lacking the visual punch of *VF2* and sporting some tacky-looking characters, *Fighting Vipers* proved one of the most popular demos.

Namco's best game in a disappointing display was the Super System 22-powered *Time Crisis* – a *Virtua Cop*-style gun game with a novel pedal feature allowing the player to peer around corners avoiding enemies' bullets.

See Edge 27 for more.

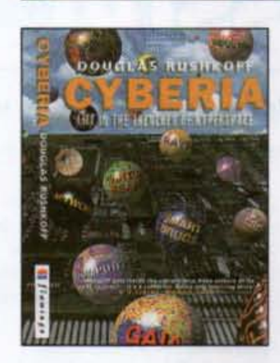


Link-up games remain in vogue at the JAMMA show. AM3's *Manx T.T.* allows for an eight-player link up

Essential reading

Cyberia

Life in the trenches of Hyperspace



- **Douglas Rushkoff**
- Flamingo, £TBA

ISBN 00 654762 3

A venerable American mathematician starts dropping LSD, travels to the caves of the Himalayas and returns to generate equations that map the shapes in his visions. The resulting formulae map the weather and the stock market better than any.

Three kids in San Francisco with a video camera and a broken hotel magnetic key encoder successfully fool a bank machine into giving them other people's money.

A fractal-enhanced 'map point' leaflet points the way to a new sort of party – a 'rave' – where thousands of celebrants take psychedelics, dance to computer-generated music and discuss how reality may soon conform to their own hallucinatory perceptions.

Just three emblematic instances of the confluence of scientists, computer programmers, authors, musicians, journalists, artists and activists reaching for a new paradigm. Cyberia. A boundless universe ('like the mind of God') where computers talk and trippers walk; a zone, irreducible to laws, where there is an infinitely complex series of interdependencies, where the tiniest change in a remote place can have systemwide repercussions; a zone currently only accessible through drugs, dance, chaos mathematics and pagan rituals. Sounds like a load of cobblers to you? Withhold your judgement.

Rushkoff's smart and funky journey into the computer counterculture is definitely worth the ride. He has the brains to sort the shit from shinola, the objectivity to deflate the blag, and the energy to stir from his armchair and get his fingers dirty. This is top-notch investigative journalism, and as he moves among the Deadhead drug dealers, paranoid industrial and pontificating West Coast hackers, hearing their theories and stories, learning the language and breaking their codes, you begin to wonder, as he does, if there might not be something in this after all. Have the reins of new technology been seized covertly by forces who would seek to radically alter our concept of self and society? Do Ecstacy, anti-Muzak, techno-shamanism and eco-terrorism really stand at the frontiers of our destiny? Or is it all just a bad excuse for a good time?



Express yourself in **Edge**. Write to: **Edge** letters, 30 Monmouth Street, Bath, Avon BA1 2BW

I was disappointed to read the first page of **Edge** 23 – obvious Sony bias was evident. Accusing Sega of running scared is naive. Sega and Sony are both serious competitors. In Japan, Sega *won* the first showdown (**Edge** 19). Issue 23 boasts one million Saturns sold.

However, Japan was only the first hurdle. The 'decoy date' was a stroke of genius. By announcing the launch at E³, Sega pulled off a major coup, ensuring that reporters from all over the world put the Saturn centre stage. It was not just a case of getting there first, but of making the biggest splash. But if anyone is employing guerrilla tactics, it has to be Sony. How much is it selling the PlayStation for? At how much of a loss?

Saturn outclassed? Oh, come on. The two consoles are actually very close. *Daytona* on the Saturn is bloody close to the coin-op and the flickers in the background are not really as bad as you say. And you say yourself, that 'when it comes to playability, *Virtua Fighter* is a winner' (**Edge** 18). *Virtua Fighter* is a conversion of an arcade game with no texture mapping. So why do you compare it with *Tekken* in terms of graphics? The Saturn obviously can display texture mapping – *VF Remix* and *VF2* are testament to this.

Sega has a coin-op division, in-house development, a mass of third party developers, strong alliances, brand loyalty, a strong image and immense experience in the console industry. Enough said.

John Neal, Malvern



'Is Sega running scared', asked Edge. No, says John Neal

Edge has never doubted Sega's ability to market the Saturn but, rather, the credibility of its console and games. Sega's decision to get the Saturn into retail before the PlayStation may, as Sega attests, have been a pre-determined strategy, but given the timing of the launch (mid-summer), the high price of the machine (£400) and the curious absence of *Virtua Fighter Remix* (which shipped in Japan as a Saturn pack-in three weeks earlier), there was little evidence to back up Sega's response. It's interesting to note that while the Saturn also shipped with *Virtua Fighter* in the US, the company is now sending the *Remix* version for free to existing owners to say 'thanks'. (Or should that be 'sorry'?)

And given that *Tekken* and *Virtua Fighter* are both conversions of polygon-based coin-op beat 'em ups, your suggestion that they shouldn't be compared to each other is ludicrous. Should **Edge** also not mention *Tekken* when reviewing *Virtua Fighter 2*?

I feel that **Edge** has lost its way and become rather biased again over the last few months. It was stated a few issues ago that a wider outlook would be taken, much to the approval of your readers and following a great number of earlier complaints. Well, at least the pathetic 'I've got a PlayStation, baby, read 'em and weep, PC boys' comments have disappeared.

Why do you have such a problem with the 3DO? All news about its progress, performance, etc. is reported in a negative way, mostly with no reason. Even the disclosure of M2 caused you to say that it will probably get superseded by other manufacturers, rather than get excited about about one of the most powerful games systems ever. It's also a shame that you didn't actually speak to any of the system's developers and instead just rehashed publicly available information.

It came as no surprise to find that Future Publishing has been



'Why does Edge have such a problem with the 3DO,' asks Bryan Keet, who accuses the magazine of failing to address the question of bias

chosen to publish the official PlayStation magazine. I'm surprised that you didn't just rename **Edge** (it is jokingly known as Sony Power, after all).

Bryan Keet, Bournemouth

It wasn't Edge that suggested that M2 would get overtaken by other technology – it was just speculation by one respected developer. Besides, that story (**Edge** 20) was hardly 'rehashed public information' – at the time The 3DO Company had not released any technical specifications or concrete details about M2, and yet **Edge** had the full story. Your accusation that **Edge** is always negative about 3DO doesn't hold water. Perhaps you missed the story in issue 24 that reported that work was progressing well on the M2 chipset as well as revealing the first games planned for the system? Or maybe you only ever want to hear the good news? If it's a completely rose-tinted perspective on the videogames industry you want, you won't find it in **Edge**.

I think the time has come for **Edge** to reformat the reviews pages, or at the very least increase the number of pages available for each review. When major games such as *Wipeout* finally reach release, I expect more than two sparsely populated pages with little text and wide gaps with nothing in. As a consequence, large parts of the game are summed up in one sentence and others just mentioned in passing. How well did the machine link-up work? As this is the first game you have reviewed to use the link-up, I would have expected more than a passing comment to it in your summing up of the game. When you have used so many pages, including a cover, in the run-up to this release, I was looking for more than this apparently rushed review.

Daniel Densley, djd@maths.bath.ac.uk

Edge gave *Wipeout* as much space as it could spare, given time constraints and the other pressures on the magazine's limited editorial space.

As for 'sparsely populated pages with little text and wide gaps', that's what's known as graphic design, and it's what distinguishes **Edge**'s pages from the garish clutter which characterises other games magazines. But that said, there will be some noticeable changes in the format of **Edge**'s review pages over the coming months which should meet with your approval. **Edge** also hopes to increase the number of pages in future issues.



Potential Geoff Crammonds are being denied the opportunity to enter the games industry, argues Doug Holmes

I am writing to agree with Caroline Peeks (**Edge** 24) on the subject of entering the game development business.

Recently, we (Influence) applied for an Atari development licence. The problem is that Atari wants to see demos of our development capabilities before supplying us with the development manuals for the Jag. We can't supply a demo as we have no development manuals, and we have no development manuals because we haven't shown Atari a demo, but we can't supply a demo, etc, etc…

It seems that the major players in the games industry are not prepared to consider using small, innovative development teams that could (and probably would) produce some amazing software. I admit that there are some exceptions to the rule, (Geoff Crammond, Archer MacLean et al) but they're certainly few and far between.

After having been in contact with a publisher for a number of months, and then being told that 'We already have games in development along a similar line to yours', a degree of annoyance has crept in. Oh well, I suppose the world really could do without some exciting, interactive, *fun* games to play.

Doug Holmes, Nottingham



According to Brian Keet, Edge is known as 'Sony Power'. But if you want undiluted PlayStation coverage, this is the magazine to buy

Your feature, 'High Flyers', in **Edge** 25 was particularly interesting to us, representing, as we do, over 100 companies concerned with developing and publishing leisure and entertainment software in Europe.

I would, first of all, like to point out that many of our new members in recent times have come from non-games areas, such as companies specialising in the publishing of interactive reference, edutainment and infotainment software as well as games. These companies are not any more isolated from the need to recruit creative talent than exists for those producing games. The difficulty is that there is insufficient talent to go around, most of which, until recently, has been self-taught.

Julian Rignall's comments about the need to have enthusiasm and commitment, as well as talent, are absolutely right. However, whereas in the past it was fairly straighforward and inexpensive to train recruits armed with that enthusiasm to produce high-quality product, nowadays the cost has soared. Not only is the hardware on which interactive software is produced, such as Silicon Graphics workstations, enormously expensive to buy, but, by comparison, it takes considerable time and further expense for companies to train new recruits in effective use of the equipment.

Many companies are indeed having to invest heavily both in equipment and training to keep abreast of development technology, the latter of which may take years. Having achieved high skill levels to augment the trainee's enthusiasm and talent, the inevitable then happens and then comes the crunch – the recruits in whom they have invested so heavily in training are poached by another company with a deeper pocket! The fact is, job opportunities and the need to recruit new talent into our burgeoning industry are substantially compromised when investment in training becomes entirely uneconomic and pointless.

Solutions to this merry-go-round must be sought. I believe that a pool of talent needs to be developed and trained on a

Continued next page

viewpoint

structured basis, with the industry as a whole funding a scheme and subsidies sought from government and EU grants. There is no doubt that our creative industry is now beginning to be seen as important to the economy of our country and Europe as a whole. We are no longer a cottage industry and must show greater confidence in our future by investing in it. People, after all, are our greatest asset.

A short-term solution to the problem may be to take a leaf out of the footballing world and charge transfer fees as fully trained staff are poached. A proportion of the fee could then go to the training scheme.

We at ELSPA [European Leisure Software Producers Association] are here to help the industry. If that means making it more cost efficient in providing secure training investment and setting up a scheme to that end, we will be more than happy to help, but the industry as a whole will need to be commited to it. Meanwhile, we will continue to pursue avenues for obtaining the means for this to happen, and hopefully opening up a route through which the enormous people potential that exists can more easily access our industry, thus breaking the destructive spiral that currently exists.

Roger Bennett, Director General, ELSPA

Edge shares your concerns although, as you admit, the attitude of the industry as a whole needs to change before the situation improves. So far, **Edge** has seen little evidence of that happening. The problem is that competition in the industry today is so intense that companies seem unable to work together to resolve a problem which affects them all to some extent. What they may not realise is that failure to do so may ultimately prove to be their undoing.

Thank you for running the Advertainment feature on Apple's trade ads rubbishing the *Windows 95* launch. It's time that PC owners realised that Microsoft has been ripping them off for years. The Mac was launched in 1984, *Windows* in the following year (three months late) and since then Microsoft has copied the Mac OS in nearly every department. Even the much-hyped *Microsoft Network* is eerily similar to Apple's *e-world*. Despite this, *Windows* still fails to match the Mac. Macintosh 89 is a very appropriate nickname.

However, you state that 'it is a shame that Macs are so much more expensive than PCs that few people can take advantage of them'. This is no longer true. To take full advantage of *Windows 95*, you need a Pentium with 10Mb RAM (8Mb slows *Windows* down considerably). The best-selling Pentium multimedia PC is the Packard Bell P60, at £1645 (inc VAT) plus £50 for the extra 2Mb RAM. The equivalent multimedia Mac – the Performa 5200 – costs £1549 including VAT. Given that the Power Mac runs rings around the Pentium PC and *System 7.5* is superior to *Windows*, this is a good price.

As for games, the Mac has been largely ignored – mainly due to John Sculley's bizarre belief that it was only suitable for graphic artists and DTP professionals. However, recently there has been a significant improvement and it seems likely to continue. The Power PC is the most powerful processor in the home and there are now more than 1.5 million Power Macs – a rather larger base than any of the next-gen consoles.

John D Fishley, Selby

EUROPEAN LEISURE SOFTWARE PUBLISHERS ASSOCIATION LTD
ELSPA

ELSPA is keen to see a more professional approach to games industry employment (see letter from Roger Bennett)

There does seem to be a significant groundswell of anti-Microsoft feeling in the wake of the release of *Windows 95*, with more people becoming concerned about Bill Gates' unhealthy domination of the personal computer market. Whether this concern affects the company's profit line in the slightest, though, is debatable.

Of course, Macintosh users have always regarded *Windows* with derision, dismissing it – with some justification – as a shabby clone of the Mac's operating system. But the fact is that, although *Windows 95* is still not as elegant or user-friendly as a Mac, it's getting rather too close for comfort. Apple had better look to its laurels.

As for Macs being expensive compared to PCs, that may not be the case any more, but one of Apple's problems is that Macs are still *perceived* to be overpriced, because that has been the case for the past decade. Apple has reduced the price of its hardware significantly in recent times, but probably not enough to persuade traditional PC owners to switch to an unfamiliar system.

I too was a bit surprised by Andrew Gibson's letter (**Edge** 24). Like him, I have always taken it as read that **Edge**'s readership is not exactly stupid, but I have reached a different conclusion vis-a-vis the Atari supplement. I assumed that we were being given the credit for realising that the supplement was not some stupid advertising gimmick.

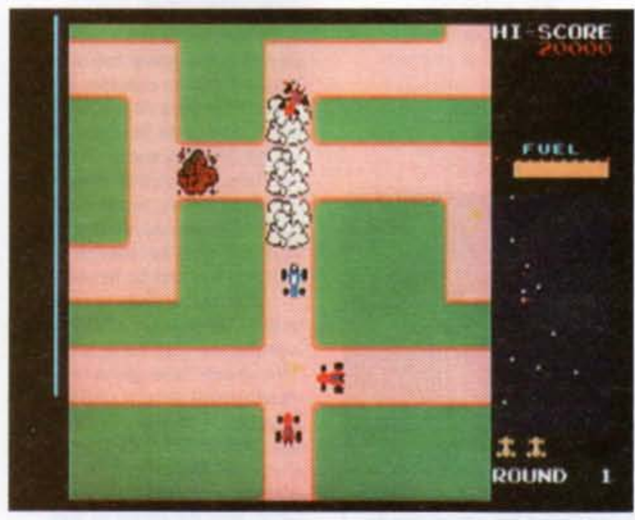
I think Andrew is getting your somewhat cynical news coverage confused with your slightly more benevolent features. You wrote a similarly upbeat article about Atari in issue 18 which no-one accused you of having been paid for. Indeed, in the same issue as the Atari supplement you printed a not over-critical feature on the 3DO M2, which also raised no screams of alarm, but of course both those articles were in the main body of the magazine.

The way I saw things, Atari, being fairly confident of their product, calculated that the value of a fairly written article in **Edge** far outweighed the cost of printing the supplement. If a few more manufacturers felt the same way, it wouldn't half bring down the cost of the magazine.

Deke Roberts, Oxford

See **Edge** 25 for a full explanation of the reasoning behind the 'controversial' Atari supplement.

I have watched the 'next-generation' console war of hype and lost promises as an impartial but very interested bystander over the last year or so. My opinion is that at present both Saturn and PlayStation are evenly positioned in the marketplace – both have their notably excellent games



It's time developers ditched mediocre copies of modern arcade games for arcade-perfect replicas of classics, says Christopher Ratcliffe



John Fishley believes that Edge has dismissed the Macintosh (above) unfairly in the ongoing Mac versus *Windows '95* debate

(*Virtua Fighter* and *Panzer Dragoon* on Saturn, *Ridge Racer* and *Tekken* on PlayStation) as well as a large number of poor and mediocre ones.

However, of the two I feel that the PlayStation has the greatest potential. It has a much wider range of developers, producing games of a far more varied nature than those seen on the Saturn – which looks to me at the moment like an overspecced Mega Drive offering no advance in gameplay. (This criticism may also be aimed at the Ultra 64 and its predecessor, the SNES.) Employing the talents of European developers was a shrewd attempt by Sony to capture the more mature gamesplayer, who is after a little more than an hour's joystick waggling.

Another point is that the console manufacturers would be smart not to ignore classic games that have been enjoyed on the home computers or in the arcades in the past. Newcomers would therefore be able to benefit from these games. Arcade-perfect versions of classics such as *Final Fight*, *SSFII Turbo*, *Mercs*, etc that still pull in large numbers of punters in the arcades and have yet to be perfectly transferred to the home would surely sell very well, especially if in a collection – Capcom please take note.

Christopher Ratcliffe, Cambridge

The PlayStation may have more sophisticated PC games on the way (*Fade To Black*, *Magic Carpet*, etc), but that doesn't mean these kind of games won't appear on the Saturn. In Japan, for example, *Sim City 2000* is about to appear on the Saturn before the PlayStation. Regarding your last point, **Edge** only hopes that projects to revive arcade classics, such as imminent Namco's *Museum Piece* CD, will eventually encompass more recent arcade hits.

When the SNES arrived on the scene, I waited until the official UK PAL version arrived and compared it to the US models I had seen running at various computer stores. To say I was not impressed with the sluggish, squashed versions of *SFII* and *Mario* on the UK machine would be an understatement. So I went to the store and purchased a US SNES. An ugly lump of grey and purple plastic, but it beat the pants off the UK model.

As Nintendo waged war on evil cartridge importers by introducing country-specific codes and 50/60MHz checking, using foreign carts on my foreign machine became a pain. So I had my SNES given the full works – security chip bypass and a 50/60MHz switch fitted. This update cost me the equivalent of a new game, but boy, was it worth it! Now I can slam any cart from any country into my SNES and off we go.

With the release of the UK PlayStation imminent, the Saturn already available, and the NU64 in the pipeline, will you be doing another tech-spec article to show us where these UK PAL versions differ from their US/Jap cousins and what the different country-code protection levels are? What about Datel and their security-busting devices for the next-gen machines?

Some of us prefer to do our gaming at fullspeed/fullscreen. When will manufacturers bite the bullet and release a standard worldwide machine running at 60Hz with a SCART/VHS output? Instead they cripple their own machines just so they'll work on granny's 1962 Bakelite TV. The software houses have the choice of releasing UK software that is sluggish and squashed or recoding it to allow for the UK machine/s deficiencies, which must lead to extra costs and delays.

Steve Burgess, Bideford

It's too early to predict if Nintendo will address this problem, but the company shouldn't be blamed for the differences in the PAL TV standard. Some of the first Saturn and PlayStation releases have shown that, with care, PAL versions of games needn't be inferior to their NTSC counterparts. **Edge** will address this issue closer to the launch of the NU64.

Prescreen

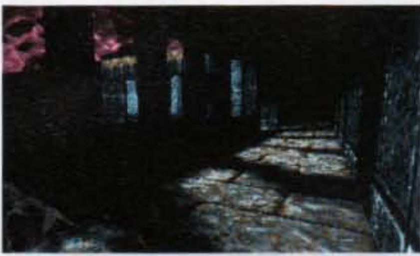


Quake



Replacing chunky bitmaps for pure polygon-based action, id software's *Quake* is set to replace *Doom* as the 3D game by which all others are judged

Format:	**PC**
Publisher:	**GT Interactive**
Developer:	**id**
Release date:	**TBA**
Origin:	**US**





Having textured polygons and no bitmaps means realistic lighting effects can be used





Looking upwards at this castle tower is easy thanks to advances with the 3D engine

Sitting in the executive suite in GT's booth at the ECTS talking to Jay Wilbur and Mike Wilson, Edge is being taught gameplay by id software. Jay Wilbur sums it up. 'The design philosophy is fly by the seat of our pants and come up with the greatest game possible. We don't have a bible. We just put it in. Is it cool? Yeah. Does it Suck? We lose it.'

It's the simplest of aims but somehow id seems to be able to realise it where most other companies cannot. Id's games catalogue speaks for itself. *Wolfenstein 3D* was released in June 1992 and immmediately became an all-time classic. *Doom* followed in December 1993 and no explanation is needed here. In the two years since nobody has been able to successfully copy its magical gameplay formula. Pretenders like *Descent* and *Terminal Velocity* come and go but *Doom* is here to stay. It seems as



A dragon flies overhead (main pic) The fantastic parallax skies which first appeared in *Doom* will not be dismissed in *Quake*

The only way *Doom* will go to the boneyard is when the sequel, *Quake*, appears

if the only way *Doom* will ever go to the bone yard is when the sequel, *Quake*, appears. And for the first time the id guys have a demo up and running.

Quake initially appears similar to *Doom*. It's a 3D maze game, it runs without a judder and there is a hefty complement of killing involved. But when you look closer it quickly becomes apparant that id has added a lot more to their new baby.

The first development was to upgrade the gameworld from bitmaps to polygons. Bitmaps are quicker to manipulate but scaling them (reducing and enlarging a single picture) produces the distracting pixellation effects that have dogged so many games. 'It's all polygons,' says Wilbur. 'We'll probably have a couple of bitmaps in there somewhere but they'll be strategically placed so that they never look bad. Torches that you can never get under. That sort of thing.'

The polygon world makes it possible to have a true 3D environment. Looking up and down is now possible and just as quick as glancing left and right. Also, because each polygon can be shaded and lit individually a realistic lighting model can be implemented. Shadows are properly cast by lights rather than being faked as has been the case up



The spookily-lit corridors enhance the atmosphere no end

until now. 'The lighting model's not finished but right now all you have to do is drop in a light source and all the shadows fall just where they would in nature,' demonstrates Wilbur.

These polygons have been extended to include the enemies you encounter during your travels. In the current demo, which Wilson admits is little more than a graphics engine, an armed skeleton man strides toward you and proceeds to hit you. Jay Wilbur takes up the commentary; 'The sword's right in my face. He's going to kill me. I'm on the ground and he's still kicking me. He does not like me.' Even at this early stage the characterisation is impressive and the lack of bitmapping only enhances the identity.

id's high-maths programmers have supplemented the lighting algorithms (comparable with Scavenger's and Bullfrog's) with a total physical gravity

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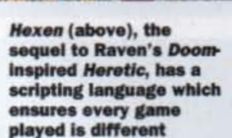
prescreen











***Hexen* (above), the sequel to Raven's *Doom*-inspired *Heretic*, has a scripting language which ensures every game played is different**



Id software were reluctant to set a specific date for *Quake*. It will be ready when it's done, said Jay Wilbur. It would be nice if other software houses followed this policy

model. Wilbur enthusiastically gestures to the screen where *Quake* is running around at around 30 frames a second. 'When you're walking down the stairs the view shifts to look one step ahead. I mean in real life what do you do if the next step is down? You look down at it. The view is natural.' This usability extends to gravity and momentum, thereby creating an almost perfect physical model. When you rest on a slippery slope you slide. When you round a corner sharply the view rocks to one side as you decelerate and run again. These are small things when examined individually but cumulatively they transform a useful game into one of the most playable to date.

Action games demand a high frame rate and id realises that no matter how well constructed the world is it won't work unless it's moving quickly. *Quake* will run in a variety of resolutions to ensure that every computer is catered for. The basic VGA 320x200 is supplemented by various options that stretch up to 320x400 pixels. id feels that the speed of the game is more important than high-fidelity graphics. And as the natural temptation is to play at the highest res it's a good decision not not include a 640x480 in favour of playability.

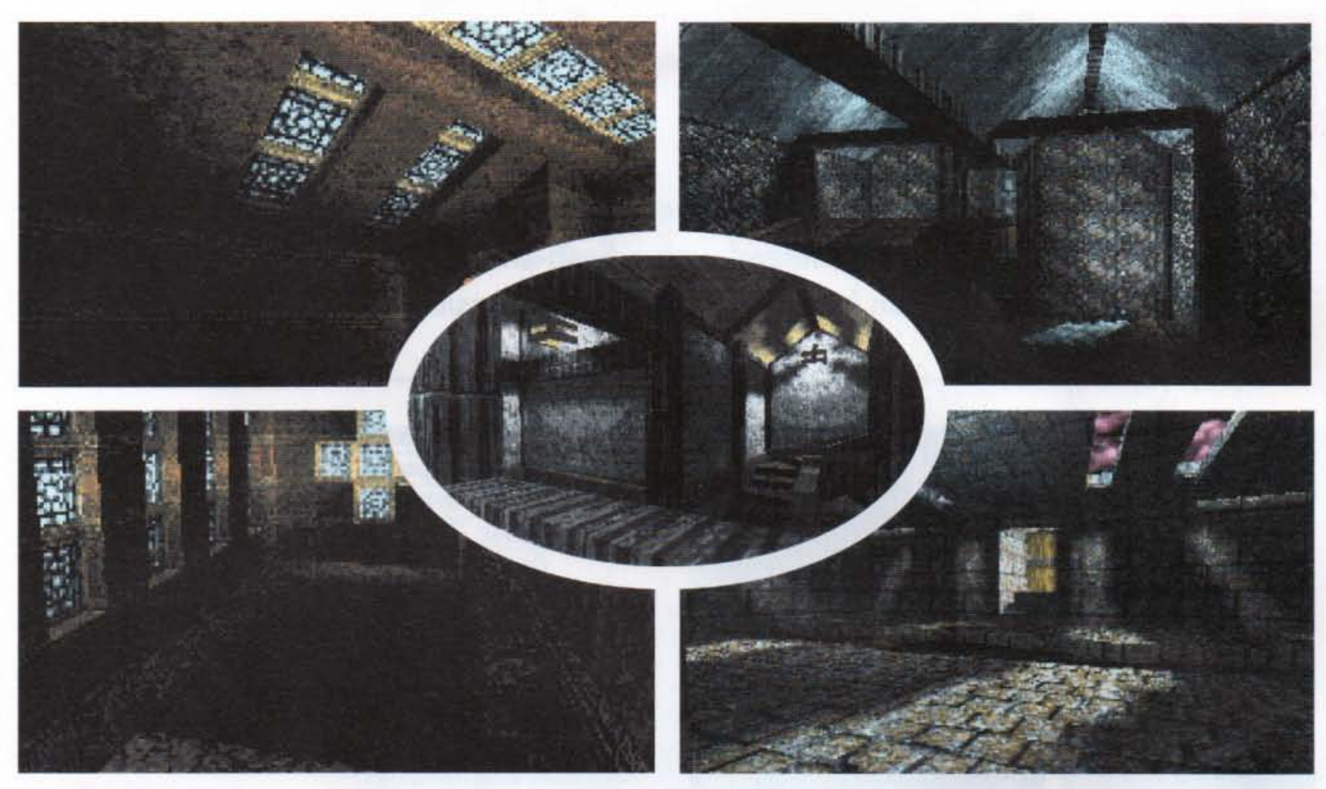
id feels that the speed of the game is more important than high fidelity graphics

If *Quake* isn't one of the biggest games of next year the entire industry will be shocked. In the US id will stick to the sharaware policy but across Europe the full version will be on sale immediately. When will it be available? 'Dunno,' says Wilbur. 'When it's done.'

Until then punters will have to be content with Raven Software's *Hexen: Beyond Heretic*. The sequel to *Heretic* is already much more of a game in its own right than the original, which was seen as the *Doom* engine with a few frills in a fantasy setting.

'It was so well advanced from what we'd anticipated,' said Wilson, describing his first impressions of the game. Raven, who used id's *Doom* technology under license to produce *Heretic*, modifed the classic's parameters to produce a less regimented and more free exploration environment. Obviously the slaughter is still present but it is enriched by some more tactical gameplay. There are now

Continued



As you can see from these grabs, the graphics in *Quake* surpass *Doom* by some way. When a player runs up stairs, his eyes will adjust to follow the steps in front (middle). The light from the stained glass windows casts shadows over the play area (bottom left)

***Doom* was linear. Kill, kill, key, kill, kill... from one level to the next**

three character classes – fighter, cleric and mage – and each has different abilities and weapons. These are all powered by the two types of mana (energy) scattered around the levels.

The basic structuring of the levels has also been revamped. 'The game's been designed with the hub and spoke approach,' explains Wilbur. '*Doom* was linear. Kill, kill, key, kill, kill... from one level to the next. You'll start in a city and there'll be five or six directions you can go. *Hexen* lets you move around and return to all the areas, including swamps, mountains and castles.'

However, the biggest advance since *Heretic* is the inclusion of Raven's new scripting language. This ensures that every game you play will be different. Every level contains traps, secrets and you'll often not know what's behind a door before you open it. This touch is certain to make it appeal to people, particularly those multi-player gamers who are itching for a bit of variety in their dungeons.

The combination of *Hexen* later this year and *Quake* 'when it's ready' should ensure id remains at the top of the technical and gameplay ladder. And with the inevitable *Quake* ports to every known platform every gamer will benefit from the Texans' talents.

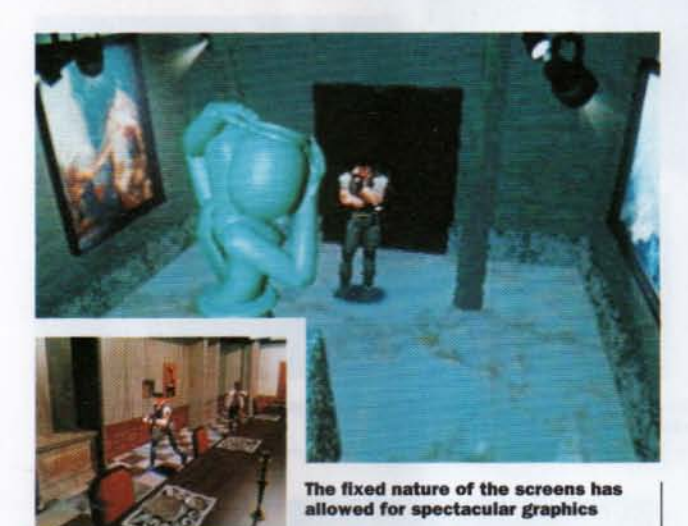




Standing at a corner (top). Looking up towards the ceiling (bottom)

Biohazard

Capcom's *Alone In the Dark*-a-like is set in a mansion infested with a flesh-altering virus. But can it surpass Infogrames' classic?



The fixed nature of the screens has allowed for spectacular graphics

Format:	**PlayStation**
Manufacturer:	**Capcom**
Developer:	**In-house**
Release date:	**TBA**
Origin:	**Japan**

One of the most attractive titles soon to appear on the PlayStation is being produced by Capcom, an odd situation perhaps, considering the company's recent achievements have amounted to little more than a handful of mediocre 16bit games and token additions to a large but hugely derivative coin-op catalogue.

The turning point game is *Biohazard* and it takes its cue from Western horror movies such as those of John Romero, presenting itself in a manner hugely reminisent of Infogrames' deservedly popular *Alone In The Dark* series. (The series, incidentally, is massively popular in Japan, with a slew of Japanese-developed games of a similar ilk waiting just around the corner.)



Set in the mid-western US in Lacoon City, a beautiful yet heavily industrialised area, *Biohazard*'s storyline concerns a virus which has affected an unknown proportion of the populace. The manifestation of the virus brings about a zombie-like state in its victim, whereupon an insatiable appetite for human flesh kicks in. The character you play is part of a STARS (Special Tactics And Rescue Service) team which has been drafted in, heavy artillery in hand, to clean up the situation.

Holed out in a mansion, your mission is to find the missing members of another branch of STARS agents. You can elect to play either Chris Redfield, a pilot and marksman, or Jil Valentine, an explosives expert. Each,

The manifestation of the virus brings about a zombie-like state in its victim, whereupon an insatiable appetite for human flesh kicks in



***Biohazard*'s ancestry, in both gameplay and graphics is clear – *Ecstatica*, *Bioforge* and, of course, the *Alone In The Dark* games**



Gunplay features strongly in *Biohazard*, the firearms expert will be very busy



As your characters progress through the buildings in *Biohazard*, the game will 'cut' to the many different screens

naturally, have particular strengths and uses throughout the game, which runs along markedly different lines depending on your choice of lead. Numerous other characters will make themselves known at certain points. The most-unadventurously named Barry Batton, for example, is a firearms genius, while Rebecca Chambers specialises in chemistry: both characters have their uses and can prove pivotal in the mission.

Capcom has used a similar graphical technique to that pioneered by Infogrames, with realtime images presented over prerendered backdrops.



A virus has affected the humans and creatures (like this spider) in *Biohazard* which, conveniently, compels them to attack you

Biohazard's level of colour and detail, however, ensure that the comparisons stop there. The biggest design achievement in games of this style lies in the correlation of prerendered and realtime-generated data, and Capcom has performed wonders, the two styles sitting together with remarkable effect.

While there will be much emphasis placed upon the use of weapons, *Biohazard* will have many puzzle-type sections, and hold many locations secret until you can find the correct key or object. The game area consists of two main buildings (both including an attic and a basement), and a garden area, all ripe for exploration and conquest.

Humans are not the only creatures to have been affected by the viral condition described in the game's scenario, however. Dogs, snakes and spiders all appear in a mutated form, and all hanker for the taste of your limbs. A knife, pistol and shotgun are available from early in the game, but the undead forms assumed by some of the baddies cannot be taken out with a simple bullet in the torso – something a trifle more heavyweight will have to be located.

With enormous boss characters, a solid line in truly gorgeous graphics and an engaging storyline, *Biohazard* could signal Capcom in the home being reborn as the player on 32bit formats it once was on 16bit.

Super Mario RPG

Nintendo has been working in secret since January on the first true Mario game for five years – an RPG destined for the SNES





Format:	**SNES**
Publisher:	**Nintendo**
Developer:	**SquareSoft**
Release date:	**January 1996**
Origin:	**Japan**

The last few months have seen an explosion in quality software being announced and released for the SNES. Most of it originates (not always directly) from Nintendo itself, as it attempts to keep the 16bit console alive in the face of increasing next generation competition. In the West, this has meant surefire winners like *Killer Instinct* and a follow-up to last year's hit, *Donkey Kong Country*. In Japan, it has meant successes like *Yoshi's Island*.

But rumours of the next true *Mario* game (the last being almost five years ago) have so far been reserved for an Ultra *Mario* 64bit dream. Now, in typical Nintendo style, the Kyoto giant has released details of a project that it has managed to keep secret since its inception last January. A *Mario* game that seems like the ultimate genre combination and the ultimate software partnership, the SquareSoft/Nintendo *Super Mario RPG*.

As you might expect, the game makes use of Rare's SNES-saving ACM techniques, but marries them to an isometric perspective akin to that of Software Creation's *Equinox* (and a game by a pre-Rare Ultimate Play The Game – *Knight Lore*).

Rather than taking Square's usual turn-based approach to RPGs, *Super Mario RPG* is an action affair with familiar *Mario* game mechanics. Hitting your head on the bottom of treasure chests reveals coins or hit-point increasing mushrooms. And although Square has yet to release details of the engine, the traditional *Mario* method of dispatching enemies – by jumping on their heads – is known to be included somewhere.

The hardest task in creating an RPG around Shigeru Miyamoto's most famous creation is surely the storyline itself. It comes as no surprise that the company has kept strictly to the *Mario* mythos. Princess Peach (or Daisy as she was renamed in the West) has been kidnapped, presumably by Koopa (Bowser in the West) and the hapless plumber must rescue her.

The story does introduce a number of new characters to flesh out the quest and offer the usual 'side-stories'



Reflecting the younger nature of Mario players, Square is promising that the puzzle aspect of the game will be fairly forgiving. Pixel-perfect jumps won't be required to get around the huge variety of landscapes on offer






***Super Mario RPG*'s isometric heritage becomes more apparent when inside one of the many buildings that litter the landscape. Elsewhere there is plenty of room to explore**



No *Mario* game would be complete without such recognisable elements as coin collecting and plenty of jumping up and down

that are prevalent in Japanese RPGs. Apart from that, this is strictly a 'platform game' *Mario* tale.

The game gets around the storage problem caused by the huge amount of ACM graphics, combined with a typically large RPG scenario, by adding Nintendo's SA-1 compression chip to the 32Mbit cartridge. This could mean that that as much as 16 megabytes of information will be on hand for the game to draw on. Whether this makes its cost prohibitive when it comes to a UK version remains to be seen. Although a date has yet to be confirmed, the usual Square development time of a year means that an early new year release in Japan isn't out of the question.

In many ways this game is a turning point in Square's development. Currently the hottest software company in Japan, it has only recently starting investing in the Silicon Graphics hardware that allows the creation of ACM games. And *Super Mario RPG* is the first direct result of that investment.

Square's other SNES releases for 1995 (*Seiken Densetsu 3, Romancing SaGa 3* and *Front Mission – Gun Hazard*) may rely on more traditional methods, but its recent Onyx workstation demo of *Final Fantasy* at Siggeraph '95, and the heavy rumour that *Final Fantasy* VII will appear on the Ultra 64 in Japan soon after its launch, shows that Square are committed only to Nintendo software. And that's a feather in Nintendo's cap that other platforms can only dream of...



A *Mario* game that seems like the ultimate genre combination and the ultimate software partnership




The graphical detail that Square has lavished on *Super Mario RPG* reflects the fact that this is the company's first release to use ACM. Typical Square touches like shafts of light beaming through windows are found everywhere

Toshinden 2

Format:	**PlayStation**
Publisher:	**Takara**
Developer:	**In-house**
Release:	**TBA**
Origin:	**Japan**

Toshinden was one of the first games to put the PlayStation on the map. The sequel intends to reinforce that position





***Toshinden 2* continues the 3D beat 'em up genre's love of rotating and diving camera angles**





Gourad shading is complete in *Toshinden 2*. Takara are even condsidering special moves based upon the position of the light

Along with *Ridge Racer*, *Toshinden* was the game that put the PlayStation on the map. The inevitable sequel, *Toshinden 2*, picks up from the ending of the original game, and sets the player in a new fighting tournament where a new boss character resides. Gaia, the end-of-game adversary of the original now appears as a playable character.

The eight original characters all appear in the follow-up, and there are plans for at least one other female character. Takara have yet to enhance each of the old character's abilities – the game is currently only 20% complete, but each is kitted out in a new outfit, giving them a look more akin to those on display in Namco's smash hit, *Tekken*.

Toshinden 2 also nods towards Namco with its lighting routines – a fixed light source will appear on certain areas to give fighters a more realistic 3D feel. However, where *Tekken 2* had to abandon gourad shading for its complex lighting routines, *Toshinden 2* makes no such sacrifice. Takara has even hinted at introducing a selection of special attacks specifically relevant to the positioning of natural light on certain levels.

Two formats of the game will appear. Early reports suggest the coin-op outshines the PlayStation equivalent considerably.

Where *Tekken 2* had to abandon gourad shading for its complex lighting routines, *Toshinden 2* makes no such sacrifice

Dark Saviour

After the superb *Landstalker* for the Mega Drive, top developers Climax have set their sights on the Saturn...

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**Climax**
Release date:	**December (Japan)**
Origin:	**Japan**

Landstalker was released two years ago for the Mega Drive, and with its isometric perspective and engaging graphics, it quickly became to Sega's 16 bit machine what *Zelda* was to the Super Nintendo. Since then, its developers, Japanese team Climax, have been working on a similar, but unrelated, concept for the Saturn. And it looks like it could turn out to be one of the best action RPGs to date.

Dark Saviour uses a completely polygon-rendered world for its visuals, and throws in a convincing use of perspective to give a truly unique look. For once, the story and setting have been chosen to give some atmosphere to the proceedings: the game is set on an island inside a prison for the criminally insane. The game's hero is a bounty hunter who makes his living sending villains to the prison – he has just three days to track down a monster that has infiltrated the prison (a place where, naturally, he doesn't have many friends).

As well as moody graphics, *Dark Saviour* also promises a multitude of scenarios depending on which characters you meet. As usual, the Japanese version will be released first, but an English language version will follow. Expect to see more in-depth coverage soon. E







Polygon-generated effects ensure an atmospheric feel to the dungeons





Set inside a prison for the criminally insane, you play a bounty hunter out to catch a dangerous monster at loose inside



Alone in the prison, cut off from the world outside and surrounded by crazed inmates – most of whom were put there by you – this creature is not what you want to see at this moment

Legend Of Thor

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**Ancient**
Release date:	**TBA**
Origin:	**Japan**

The Saturn is set to have a glut of 3D action adventures – but you can bet they won't all look as good as this





Large, detailed sprites combine with attractively-drawn backgrounds to create a pleasant atmosphere

Already looking like a welcome addition to the Saturn's software library, this new action RPG from Japanese developers Ancient is based on *Story Of Thor*, a Mega Drive game released last year in Japan (released as *Beyond Oasis* in the UK).

As before, the combat system is simplistic and intuitive, but there are also puzzle elements and degrees of interaction with other characters. One unique feature of the original game was the ability to jump your way out of trouble and to even use jumping as a mode of attack. In the Saturn version, it's possible to jump even higher – often allowing you to escape even when surrounded.

But it's the graphics that are the most obvious improvement over *Thor*'s earlier, 16bit, incarnation. Rich, detailed backgrounds combine with huge sprites and screen scaling to make this a visually outstanding game.

The development team, Ancient, includes the talented and well-known composer Yuzo Koshiro, who is currently preparing an orchestral and context-responsive soundtrack. And keeping it in the family, Yuzo's sister, Ayano, is in charge of the graphics, having already produced in-game visuals for 16bit games including *Actraiser* and *Bare Knuckle 2*.

Legend Of Thor should prove to be a welcome respite from the plethora of 3D action games on their way to the Saturn. With superlative graphics and an accomplished Koshiro soundtrack, it should do the Saturn's credibility no harm at all.

Legend Of Thor should prove to be a welcome respite from the plethora of 3D action games on their way to the Saturn



One for the Japanese RPG market this, but with a more imaginative approach





Plenty of hack and slash to keep the punters happy

Fighting Vipers

Format:	**Arcade**
Publisher:	**Sega**
Developer:	**AM2**
Release:	**TBA**
Origin:	**Japan**

Sega's latest beat 'em up takes the traditional path and adds some extras









Fighting Vipers **has eight characters to choose from (top). The camera rotates with the action to add realism (middle)**



The blocky characters, still in development, should be smoothed and enhanced by the release date. The logo looks set to rival the *Mortal Kombat* series

This armour-fighting game, named after the tough-guy characters that inhabit Armstong City, the game's fictional play area, is the latest product from Sega's AM2 stables. Using the Model 2 board found inside *Daytona USA* and *Virtua Fighter 2* arcade machines, the principle of the game follows Sega's famed beat 'em up – each player uses a guard and attack system, with a final attack available to 'finish' the enemy.

The difference between *Vipers* and *VF2* circulates around the armour system. Players add armour to their legs, arms etc., requiring the opponent to destroy that before they can do real damage.

Players add armour to their arms, legs etc., requiring the opponent to destroy that before they can do real damage

One major difference between *Vipers* and *VF2* is the camera-view. More active than *VF2*, the camera constantly zooms and spins around the arena, creating an active and rapid experience. Now replays of fatal moves can be watched from all angles.

Still in development, Fighting Vipers will either once again highlight AM2's skills, or just drown in a sea of fighting game clones.

Strategic moves

in the gaming **battle**grounds





Complex planning, blocky graphics and an almost complete lack of action make strategy games a poor relation to arcade releases in the glamour stakes. But for long-term gaming satisfaction, can they be beaten?

Power corrupts. Strategy games corrupt absolutely. Assuming absolute power over your minions, raping villages, slaughtering peasants, looting money, shattering dreams, destroying empires, building empires, creating cities, planning tactics, donating money, showing mercy... whatever your favourite genre is, it's a fact that strategy games offer more variety than any other.

They are the least accessible and yet arguably the most rewarding experience in videogames. In a well-designed game, the feeling of power and control over a myriad of circumstances offers a seductive and addictive appeal that, unlike in most games, does not diminish quickly over time. In a bad strategy game, the frustration caused by unfairness, lack of logics, lousy graphics and poor game design make the titles some of the least enjoyable it's possible to find.

There is a huge amount of money and kudos to be gained from producing a successful strategy game. Will Wright's *Sim City* (first released on the Amiga in 1987) is certainly one of the most widely known games and has now sold millions of copies. Furthermore, in its PC form it popularised the machine amongst tens of thousands of adults around the globe and put Maxis's name on the publishing map. Bullfrog's *Populous* (1988) provided the springboard for Peter Molyneux's huge success. And Sid Meier's *Railroad Tycoon* (1988) and *Civilization* (1991) have kept Microprose at the top of the strategy pecking order.

It's a measure of their success that the simple term 'strategy game' is almost obsolete today – it encompasses so many gameplay facets and permutations that it really isn't all that helpful. Open-ended and innovative graphical tour de forces like *SC2000* are juxtaposed with dowdy statistical management exercises like *1830*. *UFO* and *XCOM*, while obviously falling into the strategy genre, offer far more action than many action-based games. And



The *Sim City* duo are the best-loved strategy games. They have helped popularise the PC



Sid Meier's *Civilization* is (to date) the ultimate strategy game. It somehow combines total freedom with definite goals, fairness and irritation, surprise and smug vindication. Play it

predominantly fighting games such as *Pacific Islands* and the *Battletech* series contain a fairly hefty complement of strategy. And then, of course, there are the out-and-out board/war game interpretations, of which only a few (*Battle Isle*) ever reach mainstream audiences.

This diverse approach inevitably attracts an equally wide-ranging set of followers. The genre's main strength is that it is not seen in quite the same negative light as 'childish' console games. 'They stimulate the brain cells more than other types of games,' says Julian Gollup, responsible for *Chaos*, *Rebel Star*, *Laser Squad* and the very playable *XCOM* duo. In most genres the target audience is relatively identifiable. *Street Fighter* tended to attract teenage males, driving games the same and platformers like *Sonic* perhaps a slightly younger group. But it could be argued that strategy gamers are more mature than those playing other genres. This stems from the fact that most of these games are released for the PC, which has an older audience than any other machine.

The more mature target group allows programmers to get away with more in some areas but also enforces more restrictions in others. Graphics have always been the genre's greatest weakness but this has not crippled their success in any way. In the increasingly fickle, instant kick-seeking videogames society, there is not a single title that can visually even compete with *Sonic*, let alone *Tekken*.

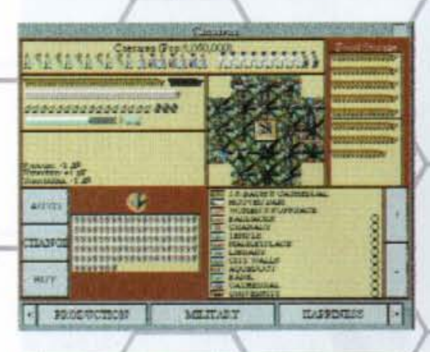
But this does not mean that gamers are destined to live forever peering at vast hex maps depicting the Balkans with titchy little units crawling over it. Times are changing as machines become more powerful and larger programming teams enable talented artists to expend more effort on the looks. 'Good graphics are important because it helps the player to identify with what is going on,' says Gollup. 'If individual levels and units all appear different this makes them all more accessible. Some wargames are more abstract but graphics always have to be functional.'

Power and control over a myriad of circumstances offers a seductive and addictive appeal

Peter Molyneux, whose company Bullfrog is responsible for some of the best graphics ever seen on the PC, offers an alternative, and slightly surprising view. 'Bullfrog is now spending considerably less time on developing new 3D engines. We have reached the stage where we have engines that are capable of displaying all the

Continued

CivNet (PC)





Civilization*'s only weakness was the lack of an unpredictable human opponent. This has been corrected with the Internet's *CivNet

Sid Meier has just finished working on *CivNet*'s direct programming. He's now adding his gameplay touches to the final product, due out soon.

'There's two areas we really had to work on. *Civilization* had a sequential turn sequence, which is OK when everybody except you is a computer because they could go very fast. But it's unacceptable to have to wait for all the other human players to take their turns, so we had to change the sequence so that everybody could take their turn at the same time. That was a pretty big change and took a lot of time. 'And then we really wanted to make a few changes to emphasise the multiplayer aspect, to make chatting to other players a lot easier and to allow you to design your costumes and face. Because you'll be seen by other players rather than computers that's important.

'We've tried to keep all the parts of *Civilization* that we think worked well, but to this we've updated various things. The graphics are a slightly improved versions of the Windows upgrade.

'Up to seven players will be allowed to compete, with an option to add computer players to make up that number if there are not enough humans. I think it's the first major game that will run over the Internet, but I'm not 100% sure about that.

Continued



polygons we need but we're waiting for the technology to catch up. Nobody talks about the number of sprites systems can display any more. Soon it will be the same with polygons. We [the industry] have created all these amazing worlds but what are we going to fill them with?'

The genre's graphics are definitely emerging from the drab world of the past. As Thomas Hertzler, CEO of Blue Byte and creator of perhaps the only graphically acceptable computer war game says, 'games with a great AI but no effort put into the graphics will only ever sell to hardcore gamers.'

It's a fact that despite all the excellent PC titles that have been released in the last few years there have been very few original ideas within them. Certainly none (except perhaps *UFO: The Enemy Unknown*) have revolutionised the genre in the same way as *Sim City*, *Populous* and *Civilization* have done. This malaise (whose symptoms include derivative *Civ*-clones, *Sim City* cash-ins and more vastly complicated and virtually unplayable wargames than you could count) is set to change in the near future. Top programmers are working hard to incorporate the latest technical advances into the gameplay. And the focus of their efforts seems to be concentrated on making strategy games truly multiplayer.

Games with a great AI but no effort put into the graphics will only ever sell to harcore gamers

'Multiplayer strategy games will be very popular – it's certainly the sort of game I'd like to play,' says Gollup. 'But from our point of view it does become slightly problematic. If you're playing over a network in realtime then the game has to have a realtime element or the players are going to be sitting around doing nothing.' This is a problem that has also delayed the eagerly-anticipated *CivNet* from Microprose.

Computerised strategy games featuring multiple players can be either turn-based or realtime. Turn-based games are much more akin to *Civilization* and *Battle Isle*, whereas realtime strategy games include *Sim City 2000* and *Pacific Islands*. Turn-based games are (at their most basic level) easier to play and control because you can sit back, examine and contemplate your next course of action before moving. Unfortunately, 'real' life, which is what many of these games are trying to simulate is not like that. It's ironic that the most hectic simulations of real life – wargames – feature the most regimented turn-based structure of all.

Taking on other players in strategy games is vital to the long term success of the genre. Will Wright, creator of the legendary *Sim City*, sees, 'online gaming becoming the norm rather than the exception.' But depending on how far into the future you look, the machine can maintain a role with humans in two different ways.

Currently, the computer is the only opponent in the vast majority of games. In the near future (the next couple of years) the computer will act as a go-between for players, keeping tabs on the movement and stats for everything. At this juncture it is essentially more of a slave than ever before. A final stage may paradoxically return to the situation we are in at the moment, when the AIs are sufficiently advanced and 'human' so as to be worth playing if there are no humans around.

Ironically, the traditional board game is a combination of many of the necessary elements of a strategy game, but you get the other players for free. The computer-based strategy game obviously owes a lot to its table-based parents, so it could be seen as a missed opportunity by the large toy manufacturers not to exploit computer versions of their favourites. For some time now these manufacturers have tried to defeat the computer industry by not suppporting it. Hasbro's announcement of the formation of a dedicated software development and publishing company marks the end of this stalemate.

Sid Meier, creator of arguably the finest strategy game ever, *Civilization*, explains the similarities between







Peter Molyneux (top) and Will Wright (bottom) launched a dual assault on the general public in 1987. Sid Meier (middle) masterminded the epic *Civilization*

computer games and their boardgame relations. 'We've carried a lot of boardgame ideas over to computer games. The idea of looking down on a map to represent where things are and the idea of having pieces to move around works well. To this we add the things that the computers do well – the menus, split screens and computer opponents who do all the book-keeping. And the one really nice thing the computer can do is hide things. The exploration idea of uncovering the world is very hard to do on a board game but very easy to do on a computer.'

The hidden movement element is cited by Julian Gollup and Peter Molyneux as well. This feeling of exploration is another hugely valuable element. Never knowing quite what's lurking round the next corner keeps the player thrusting forward into the unknown. Their interest is retained. As soon as the whole gameworld has been uncovered the developer's skill is really put to the test. To retain a player's interest after this revolves around pure playability. And regrettably most games do not make it.

Currently there is a single factor that is more important than every other when playing against a computer. This key element is the Artificial Intelligence. A good AI can compensate for many other flaws in a game's structure and a bad one will almost certainly cripple a game. The subject is of prime concern to all the top programmers.

To develop a realistic opponent is seen by most programmers as trying to emulate a human's behaviour. Most developers develop their AIs via a process of trial and error. Certain variables (aggression, cowardice, intelligence, cunning etc) are consulted every time an action is required. The variables govern all possible responses, but it's still important to have a small level of unpredictability. 'We've got a fair amount of AI experience now,' says Gollup. 'It's all a question of balancing the unpredictability and the logic. And it's got to be fair.'

Sid Meier again: 'The computer game caters to the human player so we try and keep the computer AI calculations to a minimum, time-wise. If it takes the player a minute it's probably OK for the computer to take five seconds. If it takes you ten seconds, it's probably OK for it to only take one second. It must not impede the flow of the game.'

In *Civilization*, the resulting AI works like a chess-player up against time. The computer works through all possible moves one at a time. Depending on the level of difficulty the player is on it's allowed a certain amount of time to choose its move – a 'better' computer opponent will find better moves.

The percentage of a single 'game cycle' the computer AI will grab is another interesting problem. In games with great graphics, most of the processor's time is spent shunting pixels around. But Molyneux is working on a different future. 'With the advent of really really powerful 3D engines you don't actually need to develop new ones at such a pace. Bullfrog is now spending more and more time on AI. We can see a stage where 20-25% of CPU time will be taken up by AI routines and gamecode. That's

Continued

XCOM 3 (PC)





The XCOM games, like *UFO: The Enemy Unknown* (bottom) mix action, strategy elements, and top graphics to make games with universal appeal

The first *XCOM* game (called *UFO: The Enemy Unknown* in the UK) was released in March 1994. Since then the *XCOM: Terror from the Deep* has taken up where *UFO* left off. But *XCOM3* is already in the works and promises to be the most ambitious game so far. Its success is measured by the fact that it is going to be one of the few strategy games ported to the non-keyboard lands. Although the consoles' lack of RAM will remain a large obstacle to simulating Artificial Intelligence, their



graphical prowess should see many of the games brought to the masses.

'We've added a whole new vehicle combat section to provide more depth and you can now equip the vehicles with various types of weapons and fight in realtime. We've put more characterisation in there. We've created a city environment, which you can leave and explore the greater world. The realtime system and multi-player options are the main improvements.'

The Settlers 2 (PC)





***The Settlers 2* will contain a 1280 x 1024 mode (top). The barren land (bottom) is one of a number of different sceneries that will ensure a lengthy challenge for gamers**

The Settlers is one of the most underestimated strategy games released in the last couple of years. It's a skillfully constructed hybrid of *Sim City 2000* and a wargame, but plays in its own unique way. The aim of the game is to construct a functioning and thriving community while defending your property from attack and expanding it at the same time.

The Settlers 2 is an evolution of the original game. It features many of the already established elements but adds more control features. Inset windows focused on individual settlers allow the activities of your inhabitants to be monitored more closely.

The number of available units has also been increased in order to add to the sense of creating a complete world. Ships and castles are two of the additions to the new version.

Also, a two player game can be fought, either co-operatively or against the computer opponents.

Although there are still a lot of icons, the hi-res graphics and animation will hopefully ensure that *The Settlers 2* capitalises on the cult following of the first game.

Continued



gone up a hell of a lot.'

The fruit of Bullfrog's research is a technique Molyneux calls 'Behavioural Cloning'. This artificial intelligence catch-all is centred around the need to plan for multi-player gaming. Every programmer agrees that the turn-based system is inadequate and this is Bullfrog's attempt to tackle the problem.

He poses the pertinent question: 'What if you're in the middle of a multiplayer game and want to go off for a shag? Today you've got a straight choice of dropping out from the game, leaving your character sitting there helpless or making the other players wait. None are acceptable.' Behavioural cloning is designed to examine the style of each player's game while they are playing it and learn how to mimic their style of play. In this way when a player needs to answer a doorbell the computer can 'seamlessly take over for a few minutes.' It sounds like the perfect solution but given the attachment to characters that players feel in a good game, it'll have to work perfectly if players are to trust it.

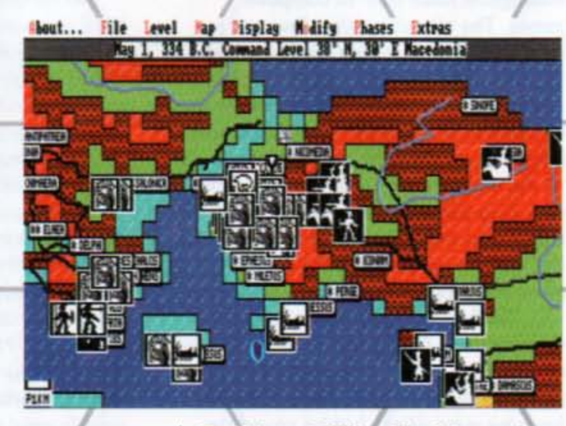
The artificial intelligence is good, the graphics are adequate and the game's structure is in place. But what actually makes a strategy game enjoyable and addictive? 'The most appealing thing about strategy games is that there's not necessarily one particular way to win,' offers Gollup. 'The user should be able to choose whichever strategy they like to achieve their goal,' explains Hertzler. 'What makes you want to play a game over and over again is that there are many different things to do. There should always be paths in a game that you haven't taken,' surmises Meier. 'It's important to be simultaneously in control yet slightly out of control,' says Peter Molyneux.

This attitude of non-repeatability can be seen as the most important gameplay element. Because of the pace at which they move, physically playing the game (moving around and controlling the characters) is totally unchallenging. Therefore the player needs to be aware of some fundamental variety within the game itself. To contrast with the *Mario* games; the player can be totally familiar with each level, yet the game remains fun simply because this familiarity with the surrounds increases the player's feeling of skill and satisfaction upon completion.

Strategy games are perhaps the only ones that frequently possess no definite end point. Players must feel as if they are achieving something, but in *Sim City*, for example, the objectives are so vague that an undisputed victory is impossible. Meier defines winning as, 'the feeling that you've spent your time well. That something has happened during the time you've been playing that you're glad you did. You accomplished something or learnt something'. Wright prefers an open-ended approach to achieve this and Meier supplements the gaming experience with an encyclopedia to browse through. Blue Byte's *Battle Isle* is, on the other hand, strictly structured, and winning can be easily defined. People's preferences vary hugely and the different approaches are likely to persist.

But above everything people like playing the games because of the power. 'The sad fact is that humanity is one step away from being a tribe of apes. At its most basic we all want to be the leader of the pack and what computer games allow you to do is be that leader,' says Molyneux. Strategy games remain firmly in the domain of the PC. But as consoles strive for more adult acceptance this is changing. (The best selling *A-Train* is now out on the PlayStation.)

Most importantly, strategy games are spearheading the drive toward true multi-player environments – and that's where the future lies.



The *Universal Military Simulator* may have been a fine game, but graphical dullness like this has confined the genre to the 'geek' pigeon hole. Wake up. Platform fans have found a new level of gameplay waiting to be freed from the top games

And the rest...















Dungeon Keeper (top) looks stunning. It may be the closest to merging the strategy and action genres when it is released in December. Blue Byte's *Shadow of the Emperor* (top right) is the second sequel to the only war game that has ever gained mainstream popularity. You can find the original, *Battle Isle*, on a variety of budget PC releases. *Simisle* (top left) is Maxis' latest Sim-something effort. Microprose, arguably the world's leading strategy developer, has *Magic: the Gathering* (middle left) as its big Christmas cult release. *This Means War* (middle right) is an isometric battle planning exercise due later this year again from Microprose. The divide between strategy and role-playing games has never been narrower. The *Ultima* series provides the bridge between the two but the Windows-based *Mordor* (bottom left) is an interesting spin-off. Dull to look at, it's still the sort of game that some get addicted to. The shareware nature ensures the hit but you'd better fork out for the kick. Grandslam's snappily-named *Seventh Sword of Mendor* is a hark back to the past (*Dungeon Master*).



All this and M2

First step or last chance for 3DO?

3DO's M2 hardware is now complete. But can it fight off Sony, Nintendo and Sega in the months (even years) to come? The 3DO company seems to have few doubts about its new baby...

Four years after The 3DO Company came into existence, CEO Trip Hawkins invited Edge to its Redwood City HQ to check out its progress. The day was dual-purpose: to show off the current generation of Studio 3DO software and to provide an exclusive peek at the now complete M2 hardware. And it's indicative of 3DO's current situation that the impressions of each contrasted sharply.

Although the current generation 3DO has sold over 700,000 units and the company's finances are on the up, the vociferous support by Electronic Arts and other big names is waning. Hawkins needs to convince third party developers now that his platform has what it takes to be the best. 'We really want to target new customers with a standalone unit in 1996/7,' says Hawkins. It will only be in this way that quality titles will appear for M2 for next Christmas and beyond.

So it was down to M2 hardware guru Toby Ferrand to detail the company's future. 'We've learnt a lot of lessons from our current hardware,' he says. 'We're very confident that M2 blows away the competition from a performance perspective.' Then he went on to give a frank and valuable tour of the M2 development labs.

'A multimedia system is all about managing a lot of data. Audio data, video data and 3D data. A system's power results from its ability to manage and handle that as quickly as possible,' starts Ferrand. And M2 is designed with these aims in mind. The currently available specs from 3DO include 1 million polygons per second, hardware z-buffering, MIP mapping, and MPEG decoding.

To make this possible The 3DO Company enlisted the help of some of the PowerPC consortium's (Apple, Motorola and IBM) top hardware designers. The custom PowerPC 602 chip was one of the fruits of this labour, the other was a highly integrated board with all the major components crammed on to one chip. To demonstrate the technology, Ferrand compares the latest generation of the M2 hardware to the competition.

Lying in front of Ferrand are a disemboweled Saturn and PlayStation. He points to the Saturn: 'The first thing you notice about the inside of the Saturn is that it's a very chaotic design, frankly. There are a huge number of chips for a mass market board like this. It's really thrown together. I can imagine an arcade system being as complicated as this where you've got less material bills pressure but this is a really difficult system to assemble.

'And this is a PlayStation. It's more what I expected for a product of this nature. Fairly dense board, fairly compact and certainly simpler than the Saturn. This is really targeted at a high volume market but they're certainly losing money at $299.'

Next out is the latest Goldstar M2 logic board. 3DO refused pictures of the labs and board, saying that it's too early to let the competitors really get to grips with what it's up to. But Ferrand is not keeping his target a secret: 'We want a single logic board with no back-mounted components, as small as the PlayStation's but with seven times the power.' And at the moment things are looking good.

The board is slightly bigger than the PlayStation's but there are some large spaces that Ferrand says will not be there at the end. All the components are on a single board, unlike the the Sony machine, which has some components (CD-ROM controller chips) on the back. Also, the power supply is being placed on the same board. The reason for this compact design is quite simple – price – but there are two main ways this saving can be achieved. By mounting all the components on one side of the board manufacturing costs are greatly reduced, and likewise, the fewer components are used the lower the overall bill.

3DO has essentially condensed the power of M2 into two chips. The PowerPC 602 processor works in tandem with the Calvin chip that performs most of the hardware trickery. Supporting these are the usual array of CD controllers, RAM and ROM banks and connectors. The Calvin chip is benefitting from IBM's extremely high-tech manufacturing capabilities. The first wave of development systems (which are already with programmers) are unoptimised and would be extremely expensive to produce for the mass market. From here on the team is concentrating on integrating the final silicon as much as possible.

An example of this is the Calvin chip. The denser the silicon in a chip the smaller its die size (the chip's physical area). And because the die size is ultimately directly proportional to the cost of manufacturing the chip, high technology allows the product to be manufactured for less. M2 is based around a five layer chip manufactured using 0.35 micron technology (ie it's small and extremely dense).

The power packed into this silicon enables M2 to perform all the graphical effects in hardware, as opposed to expecting programmers to develop their own 3D clipping and interpolation routines

Continued next page

3DO M2 where now?

(which takes time and is hard to do well). This hardware assistance will undoubtedly prove very attractive to new developers and will encourage doubting software houses to sign up.

Although Hawkins' aim of creating a standard multimedia platform for all the family has not exactly succeeded with M1, the emphasis is still on this goal. For M2, however, 3DO has added the huge mathematical capability of M2's polygon engine. This enables 3DO to keep focused on its goal but also allows pure game developers to exploit the machine's power. And a major part of M2's future involves MPEG video.

Video playback is becoming increasingly important in games today as publishers assume that the more mature first-time gamer requires high-quality visuals to depict a storyline. In this way they can associate their product with films rather than consoles. The current 3DO uses an adequate video playback technology called Cinepak but the quality never approaches that of VHS.

M2 has a full hardware implementation of MPEG on its Calvin chip. In 3DO's testing lab streams of data are pulled off CD, decoded instantly and mapped on to a variety of spinning and moving shapes at 30 frames a second. 'To us, the MPEG data is just like any other texture. Each of these spheres,' gestures Ferrand, 'is 2000 triangles. You just tell the graphics API to take this texture and wrap in onto this object and it does it. As you can see you can do anything with the system.' He proceeds to add a video background and a spotlight to demonstrate.

One of the most interesting possibilities of this power is that it will soon be possible to have constantly moving textures. Rather than simply substitute one bitmap with another, it will be possible to have video walls within games showing footage as if it were building texture maps. In fact, it seems as if the MPEG hardware (it has won industry awards in its OEM format) could be almost too good until CDs can hold more data.

'If we're decoding at 640 x 480 resolution we've got about 50% of the bandwidth left,' says Ferrand. The Video CD standard is 320 x 240 resolution so 640 x 480 is four times that. If you have a quad speed CD drive or were playing over a fast set-top network our CD is already very close to what you'd expect to see on a DVD or LaserDisc. And don't forget that you can have multiple streams simultaneously. Now all we need is a dense enough CD to store a whole movie on it.' And it's likely that 3DO, having realised this power, will have decided to support one of the DVD standards.

The probem of what to do with the original 3DO's components when upgrading to M2 has obviously been one that has weighed heavily in plans for M2. Trip addresses the question from a marketing point of view (see the following interview), but from a technical side RJ Mical raises different points. The two key elements within the 32bit console are the RAM and the CD-ROM drive. RAM is expensive but another couple of megabytes opens up many programming possibilities. 'It's a question of performance. Do you want to save the money but have a potentially much lower performance because you have to go through a much longer pipeline to get to that RAM? I don't think it [the 3DO's DRAM] could be used as regular, normal high-speed interface RAM,' RJ says.

The CD-ROM is important because it illustrates upgradability. It is now just as cheap to produce quad speed drives as it is double speed drives but the original 3DO is stuck with a double speed model. To replace this (as will eventually be necessary) would mean buying a new console, a slight contradiction for a slot-in upgradable platform. Currently, however, it is unlikely to pose a significant obstacle for M2. As long as 3DO games work with the new console (and the company has just finished testing all the games to ensure this) customers will probably not care.

Just as M2's impressions were almost totally positive, the current batch of 3DO games weren't.

The Studio 3DO titles were a mixture of the promising and the totally lacklustre. *BattleSports*, a title that would barely be considered passable on the Mega Drive, sat uncomfortably next to the smooth 60fps demos being shown on M2. *Bladeforce*, *PO'ed* and *Starfighter 3000* confirmed that good things are possible with the existing 3DO hardware, but at point of sale they still cannot compete with the other machines out there – both in terms of graphics and gameplay. And although *Deathkeep* is the fastest game on the machine ever, the level design is disappointing to say the least.

But it is fast-paced action games that will sell M2, not embarrasing pseudo board games like *Zhadnost*. Although 3DO software is now abundant, the initial roll-out of 3DO games was less than spectacular, both in terms of quality and quantity. Hawkins admits this and says that the company will being taking a different approach to M2's software situation. 'We wanted to take matters a little more into our own hands so we're not totally going to depend on third parties,' predicts Hawkins. 'We're developing more internal Studio 3DO products and working specifically with really good third parties who have the ability and the interest in being on the 64bit leading edge. We think that way, that we'll have a much less risky introduction and at the introduction we'll have the really great killer applications that we need to drive interest in the hardware.'

M2 has crossed the line from being a collection of fanciful tech specs to hard silicon that people can work on and believe in. And that can only be good news for the company.

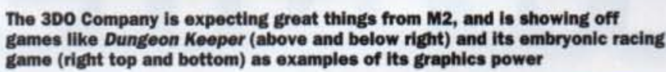


The very first 3DO prototype sits proudly in the company's cafeteria. Big, isn't it?









The 3DO Company is expecting great things from M2, and is showing off games like *Dungeon Keeper* (above and below right) and its embryonic racing game (right top and bottom) as examples of its graphics power

RJ Mical and Dave Needle are not what you'd expect hardware designers to be like. RJ looms over his partner, joking and joshing while Needle laughs and gives as good as he gets. There is nothing about either man that makes you suspect that they've designed some of the most acclaimed machines of the computing age. RJ is a shining light in an age of corporate grey.

His first professional hardware tinkering was years ago in Chicago for a company called Williams Electronics. But the development pace accelerated when he teamed up with Needle in the early 80s and set about designing a new hardware platform. Years later the Amiga 1000 was born, and with it the first powerful, practical and upgradable hardware platform since the PC.

The Amiga was immediately recognised as something special in the technology department, but the A1000 model never made the impact that Commodore hoped. 'It was recognised as a real nice piece of technology that just wasn't sold well,' says RJ, and although the machine went on to be hugely successful in Europe it never truly caught on in the US market. But it was RJ's and Needle's initial specs that allowed the platform to flourish. Speaking about the Amiga's UK and German tecchie demo-coders he enthuses, 'These mad-dog programmers who live, breathe, eat and drink this stuff. I would hire each one of them to join my company if I could because I want those kind of passionate, crazy, wild-haired, wild-eyed fanatics who care about doing superb things.'



Dave Needle (left) and RJ Mical (right) are the development duo behind the 3DO hardware and M2 upgrade

Following the Amiga was the Lynx, born out of Epyx's company labs. 'We didn't believe it had a chance of surviving when it was sold to Atari. We resisted as much as we could having the thing go to Atari and when we were unsuccessful we resigned from the company.' The Lynx is yet another of Atari's great missed opportunities.

So RJ, with Dave Needle and Dave Morse, set about a new task, designing prototypes of what eventually became the 3DO. 'People were willing and enthusiastic to front us the money to bring it to fruition,' he recalls. RJ took charge of the operating system and Cinematic Software Tools and is currently vice-president of The 3DO Company. He's bullish about the prospects but in a much less corporate way than Trip.

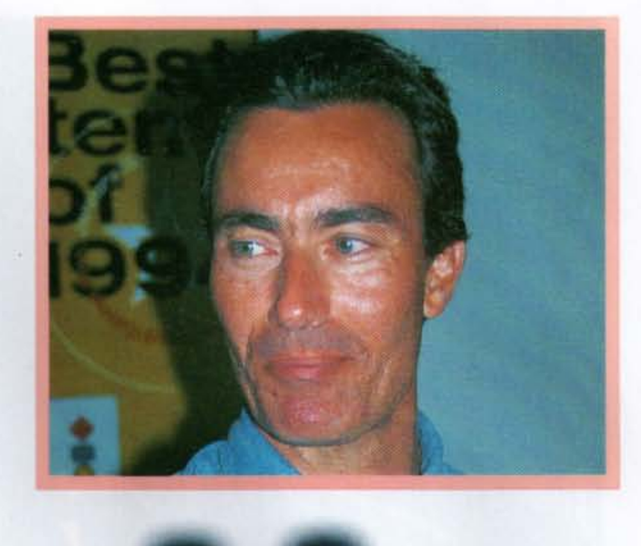
'With the 3DO, we wanted to make you sit back and say, 'Woah, this is television." He's particularly delighted with the 3DO's overall graphics capability but thinks that polygons on their own are over-rated. But with M2 being so polygon-focussed times are moving on. Speaking to RJ it's easy to forget what influence he has had on the industry. As VP he's closely involved in 3DO's strategic planning and makes no secret that he'd like to see Philips jump on board and ditch the CD-i – 'It's time for the next steps to be taken.'

RJ's lounging around on the floor staring up at a big TV showing off the latest 3DO games going, 'That's so cool. Hey, just look at it move'. He's got a 60" projection TV, a 3DO (or a few) and the six pads required to get the most out of *FIFA International Soccer*. And of course the largest 'tache in the industry (only he's shaved it off recently). The wild-eyed enthusiasm makes you believe because he so obviously does.

Continued next page

3DO M2 where now?

Trip Hawkins



Trip Hawkins was present to detail The 3DO Company's performance and answer questions about its future. He was in a bullish mood. First there was a rundown of the company's finances, but it was his plans for the next year that were listened to most carefully.

Edge: How are you doing? Made any money yet?

TH: Let me update you now on the progression we've made as a company over the last year. We just released our June results. Our revenues were up 45% from a year ago so that's one occasion of progress. Our expenses were down by 30% from a year ago so we just worry about how we spend money as all our losses were cut by 50% from last year. Also our cash reserves have increased significantly. We actually have more cash rate now than we've had in any time in the last year. Our installed base is now around 70,000 which is 5 times more than it was a year ago – a year ago it was only about 150,000 – that's a lot of progress in a year. We now have over 220 software titles available compared to around 50 a year ago when Road Rash had just been released. That means a year ago we had *Total Eclipse*, *John Madden Football*, *Shock Wave* and *Road Rash*, that was about it. So it's really improved quite a bit.

Edge: What about your distribution network?

TH: We're now in over 10,000 retail outlets in America, which is up from only about 4,000 a year ago. A year ago, we did not have GoldStar even shipping in any 3DO hardware. So that's another big change in the last year. They're now shipping both NTSC hardware for markets like North America as well as Power hardware for markets like Europe. We are now selling in Europe – we were not selling in Europe a year ago. We are also selling in a lot more countries in Asia than we were not a year ago. So that's a big change.

Edge: You've had to rely heavily on third party software support fron companies like EA and Crystal Dynamics to date. How are your efforts to establish Studio 3DO as a first-rate publishing house developing?

TH: We're really excited to be building up our publishing business. It's really grown a lot in the last year, and it's really finally ready to take off. We're in a great location to be building up the studio and we've put together a group of talented people. So we've enabled the company to bring together the four different industries: the semi-conductor business, the PC business, graphic war station business, and the video game business. And of course, with the studio we're able to leverage off all of those talents. We're bringing together now the real merger between Silicon Valley and Hollywood talent. In fact, when I founded Electronic Arts in 1982, there were about 10 other people who I considered to be my co-founders who were all hired as employees before we actually had our first real office.

You may find it interesting that five of those people are Artist Studio 3DO – including myself, of course – but also Joey Barer, who was the first producer at Electronic Arts, the first producer of products like *Doctor J* and *Lurg Luan Luan*, stuff like *Bartscale*, the *Seven Cities of Gold*, *Newall* and quite a few other projects. Steve Hayes was one of the first two technical guys at EA. Among his other exploits over the years he was the guy who reverse-engineered the Sega Genesis for EA, so he worked on a lot of great games there. Another guy, Bill Budge, was the artist behind *Pinball Construction Set* which is still considered one of the all time famous games. Of course, you know he's done the engine for *Bladeforce*. He's applying the energy now to some other new games we're evolving. David Mayord, who was with Steve Hayes, is one of the original technical guys and he was the guy that designed the first artist workstation at Electronic Arts.

Bladeforce

Bladeforce promises to be 3DO's biggest Christmas hit. It's certainly the fastest title on the machine and the huge variety of *Bladerunner*-esque scenery slides by to impressive effect. Over the past couple of month's the gameplay has been finalised. You are a copter-headed mercenary hunting down criminals in an strategy action environment. Expect a full review next month.

Killing Time



Studio 3DO's first attempt at a *Doom* game with a plot. Explore a large estate complete with a variety of puzzles and foes to thwart your progress. The idea's sound but the slow and jerky 3D action and limited number of bitmaps makes the total experience less than gripping.

So that's just a few of the people that I brought over from my experience at EA. And then, of course, you have people like Eaves Oyion, Greg Resiski, guys who have come over from Industrial Light And Magic. They've worked on *Jurassic Park* and *Star Wars*, and have brought a lot of their ability as creative people and artists to create the characters and storyline of products like *Bladeforce*. And there's Ed Lopper, who was with Atari games for more than 10 years.

So we feel like we've got a really terrific core of really experienced, really talented technical and creative people from the games industry and we've got a good nucleus now to build around and we're going to build that business as fast as we can. Our focus is going to be on creating state of the art titles that are really on the leading edge, and the fact that we've got the first real 64bit architecture gives us a great opportunity. We're going to have ten projects in development for M2 by the end of next month, just based on what we're doing with Studio 3DO. That gives us the early lead as a 64bit developer.

Over the course of the next year we're probably going to publish 10 to 15 titles for Studio 3DO, and as you know, *Killing Time*, *Bladeforce*, *Zadnost*... those are really the first games that will be coming up in Studio 3DO that we've developed from scratch. So that gives you a taste of where we're starting from and we think we going to be able to get better over time as well.

Edge: M2. It's been 18 months since you first hinted at its existence. Where is it now?

TH: We've made really good progress on the M2 technology, which is going to be completed this year as we originally forecast, and we're just in the process now of having the foundry fabricate the second version of the custom chip set. Even with

Continued next page

3DO M2 where now?

the first version of the custom chip set we've been able to start manufacturing and supplying development systems to software developers in the last month or so. You're going to get an exclusive look at M2 hardware this afternoon. Now we've got some real demos running on real hardware. Of course, you know it takes a while to develop really pretty looking artwork and lots and lots of scenery, but with a machine that is that capable, you won't expect to see a tremendous amount of scenery this afternoon that is actually running on the M2. But you'll get a taste of what the hardware is capable of.

Edge: You've been in the game for a couple of years now. Has the market followed your predictions or not?

TH: OK, looking at the marketplace, it's finally moving from 16 to 32bit. Two years ago, when we introduced the first dedicated advanced CD system, a lot of our competitors didn't want to talk about any of the virtues of CD. All they cared about was cartridge, cartridge, cartridge. Developers were still trying to learn how to use CD capability. Well, it's totally different now. Now, virtually everybody except Nintendo is doing CD products. Developers have figured out how to take advantage of CD capability and consumers are pretty lucky to find out how terrific CD capability is. And of course, Nintendo will be in the market next year. They're telling developers that they will process CD capability – it's not clear exactly what they're going to do. One of the things I think will be happening with 32bit is that it will have its first really big Christmas this year. A lot of time and effort will be spent by all the companies to explain 32bit technology to the consumer and explain the benefit of CD systems to consumers. In many ways, the intrigue of the Saturn and the PlayStation will just really help speed up the development and the growth of the 32bit market and speed up the transition of the 16bit customers.

I think Nintendo will do the same thing next year, to speed that up. We thought we'd have a really good shot at a significant share of this market. I don't think anybody's going to dominate the market – it's going to be carved up.

Everyone has their strengths and weaknesses. We feel that our strengths are that we're the price leader, we're the value leader – you get a lot more for £299 than you get from the other systems. We also have by far the best software library, and that's important not only for the consumer but also for the retailer. This is because they're not going to make money on hardware, particularly Sony and Sega hardware, they're going to make money on software. There's not much of a library for the other formats this year. And we're the only company that offers an upgrade path, so any consumers that are looking at this technology are already aware of 64bit capability and are already starting to think that they're making more of an investment and will appreciate 3DO a little bit more.

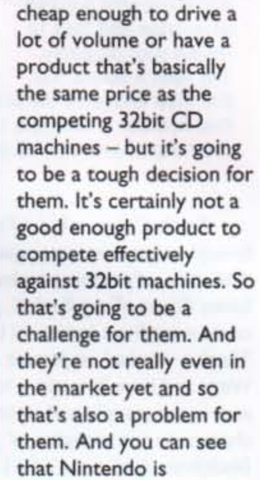


Edge: Let's go through your competition. Nintendo are the big unknown. What do you think of them today?

TH: Nintendo is an incredible company. They're a great marketing machine and have done a fabulous job in the last year marketing products like *Donkey Kong Country*. I think they'll continue to be very successful doing that. There's a lot that's right about what Nintendo is doing. I think there's also a lot that's wrong about what they're not doing, because they've sort of allowed their position in the platform market to decline and they've had a steadily decreasing market share now for about six years. And what they're going to bring out next year with regard to the Ultra 64, I don't think is going to totally turn that situation round.

Nintendo, because they're Nintendo, will be able to sell a lot of anything they introduce, I think they'll prove that with Virtual Boy – they'll sell a surprising number of those and they've got a lot of marketing power. But looking at the Ultra 64, it was a product that was invented in 1993 and will not be delivered until 1996. The total industry and marketplace will change in that period of time. It's not clear to me that there's really a market for a $200 or $250 cartridge system by 1996. Consumers will understand CD capability and what it's advantages are and they'll want high performance if they're expected to spend $250 on a machine.

First of all it's basically a 32bit machine, there's nothing 64bit about it. It has a 32bit CPU, it has a 32bit data bus and it has a 32bit memory bus. There's no 64bit anywhere about it. And what they've done is, in some ways, over-architectured to have more power than they really need, but it's just going to be a cartridge machine and in some areas it has important bottlenecks that will keep it from being a really superior CD machine. They've got an awkward decision to make here, as to whether they want to have a really expensive cartidge product that may not be cheap enough to drive a lot of volume or have a product that's basically the same price as the competing 32bit CD machines – but it's going to be a tough decision for them. It's certainly not a good enough product to compete effectively against 32bit machines. So that's going to be a challenge for them. And they're not really even in the market yet and so that's also a problem for them. And you can see that Nintendo is struggling for them to close their UK office, for example.



Sega. Look at the Sega CD and the 32X, the last two products they introduced before the Saturn. They were assuming that by having prices below $200 they would generate high volume, and all they did was introduce products that confused customers, had surprisingly shortlife cycles, and in a relatively short space of time their sales volume started to trail off. Now they, of course, criticised 3DO for some of the same things, but over time our volume is going up. That says something very different about consumer acceptance of 3DO. Then Sega brought out the Saturn, which is a very expensive machine to manufacture, so they have to sell it at a higher price point. And now that you see products like 3DO at $299, $399 is starting to look like a pretty expensive price point for a comparable system.

Of course, Sega has also had some financial problems. They've had big layoffs in many of their organisations. They've really seriously trimmed back their Canadian operation. Look at the third party picture for the Saturn. Saturn has been available as a technology to the developers for two years now, it's been for sale for about 10 months and it should be here in the US, but where's the third party software? I think that reflects a real lack of endorsement from the third party community. And we feel pretty

Flying Nightmares

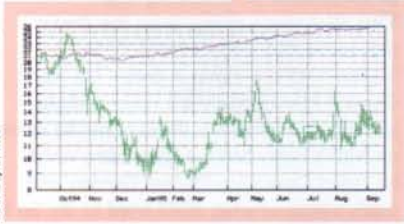


A very appropriate name for Domark's dismal flight sim. The cockpit takes up half the screen, the ground is almost entirely untextured and the frame rate chugs along. In fact it's more reminiscent of a three year old PC game than a 32bit console.

comfortable with our ability to compete with Sega. We're now selling at a lot of the same stores that they're in even though they have feeder stores which are one of the places you have to go to get Saturn – 3DO is very widely available, even in the same stores that they're in we're outselling them in many cases.

Sony are a very formidable new company. I think they've gone through two phases already. They're about to go to a third. The first phase, everybody was saying, 'oh Sony's the newcomer, they don't understand the business, they'll probably screw up, and they've had a series of failures in the digital world so why should we assume that they'll know what they're doing?' It





Courtesy of MIT

3DO's share prices over the past year. The top shows value and the bottom volume of trading. Note the E3 surge early May.

then went into a second phase, where 'Sony's going to take over, they're going to have 100% of the market share, everything they're doing is perfect, they're perfect, they're perfect, they're perfect.' OK, well that seems to have come to stop about 30 days ago.

The first thing they did was they raised their licence fees in Europe to about

Continued next page

3DO M2 where now?

twice the normal licence rates in the history of the industry, so that took a lot of people by surprise. Then they shut down their Canadian operation, then at the last minute before the US introduction they completely changed their retail programme. That shows a lot of confidence in what their first plan was! Then Mr Race departed, so... it doesn't look like everything's completely perfect there.

What I would just point out about all of the competitors – 3DO, Nintendo, Sega, Sony – we've all got our strengths, we've got our weaknesses. It's going to be a battle, everybody's going to get their share of the business and nobody's going to be a big winner, nobody's got it all figured out.

Edge: When will the M2 be available on the shelves?



TH: Well, as I said earlier, we're right now not trying to commit to a specific time frame because we want to base that decision on when we have a mass of good titles, and it's just too early to forecast how long that will take. You can make some theory, which is that normally it takes a year from when you have development systems to get some good titles and in some cases, if you're developing a really good, original title, it might take 18 months. But there are some things about M2 development that allow really great software to be developed more quickly than that: first, it's very similar to developing software for the first generation 3DO. We've heard estimates from 6 to 9 months of development time for good titles from EA and Crystal Dynamics. Second, we've got tremendous interest from many of the arcade game companies because M2 is such good technology. They want to use it in the arcade, and then it's really easy for them to produce a consumer version of the same game. And to port a high-end 3D arcade title to M2 is actually very straightforward. In the past, for something like, say, *Virtua Fighter*, there are a lot of features missing from hardware like Saturn, so it puts you in a situation where you're having to redo a lot and work round a lot of problems. M2's actually better hardware than what's in the coin-op market right now. So, porting to M2's actually very easy. So again, a lot of the coin-op companies have told us that a high-end, port-up game could be ported over in maybe 6 months.

Edge: M2 as a coin-op has obviously fueled rumours of deals between Sega and 3DO. What do you have to say about this?

TH: Well, I can't tell you anything about any alledged deals. When we have an M2 deal to announce, we'll announce it and I can't really comment on any speculation about who we might do business with.

Edge: How will you keep existing 3DO owners on your side while opening M2 up to the new consumers? Will we see both add-on and standalone units?

TH: Yeah, we'd like to eventually have both configurations. The important thing about the upgrade is that it fulfills a committment that we've made to the customer and that's a logical growth path for anybody that has a 3DO system today. The importance about a standalone machine is that you can integrate and design something that is cheaper to manufacture. We really want to target new customers with a standalone unit in 1996/7.

Edge: The bottom line. How many different developers are out there actually with systems, working on exclusive M2 projects?

TH: It's not that many so far. I don't know the actual number – it would be in the tens, but I don't know the exact number. We're not trying to do what we did last time. It just doesn't make any sense to do that, so what we want to do is, instead of that shotgun scattering approach, we want more of a rifle shot approach. We think that it really takes a relatively small amount of really good titles to sell this kind of hardware, so we would rather work with a more select list of companies who have the interest and the capability and then over time we'll expand.

Edge: When you started out, you talked about 3DO becoming the next global standard. But you're now saying that you'll just take a large market share. Isn't this a serious down-grading of your dream into an acceptance of something less?

TH: Well that's always been the dream that we've had. I don't know if you're familiar with the movie *A Bridge Too Far*. General Montgomery is a really brilliant innovator and military thinker, and he came up with a really brilliant idea there which he called Operation Market Garden, and that's a little of what 3DO tried to do. So I think a lot of the excitement of 3DO was that we thought we could pull it off. OK, so we didn't get to that last bridge. In looking forward, that's still the dream, that's still the goal, we still want to continue to make business decisions that will move us in the direction of that opportunity, but now we understand that it's really difficult. So, in the same sense that Operation Market Garden hoped to end the war in 1944 and that did not happen, the war continued for some time, so the war in the market place will go on for some time.



PO'ed

Produced by American codeshop Any Channel, *PO'ed* is shaping up to be a capable take on the *Doom* theme. Despite having a less than ideal screen update, its graphics are very competent.

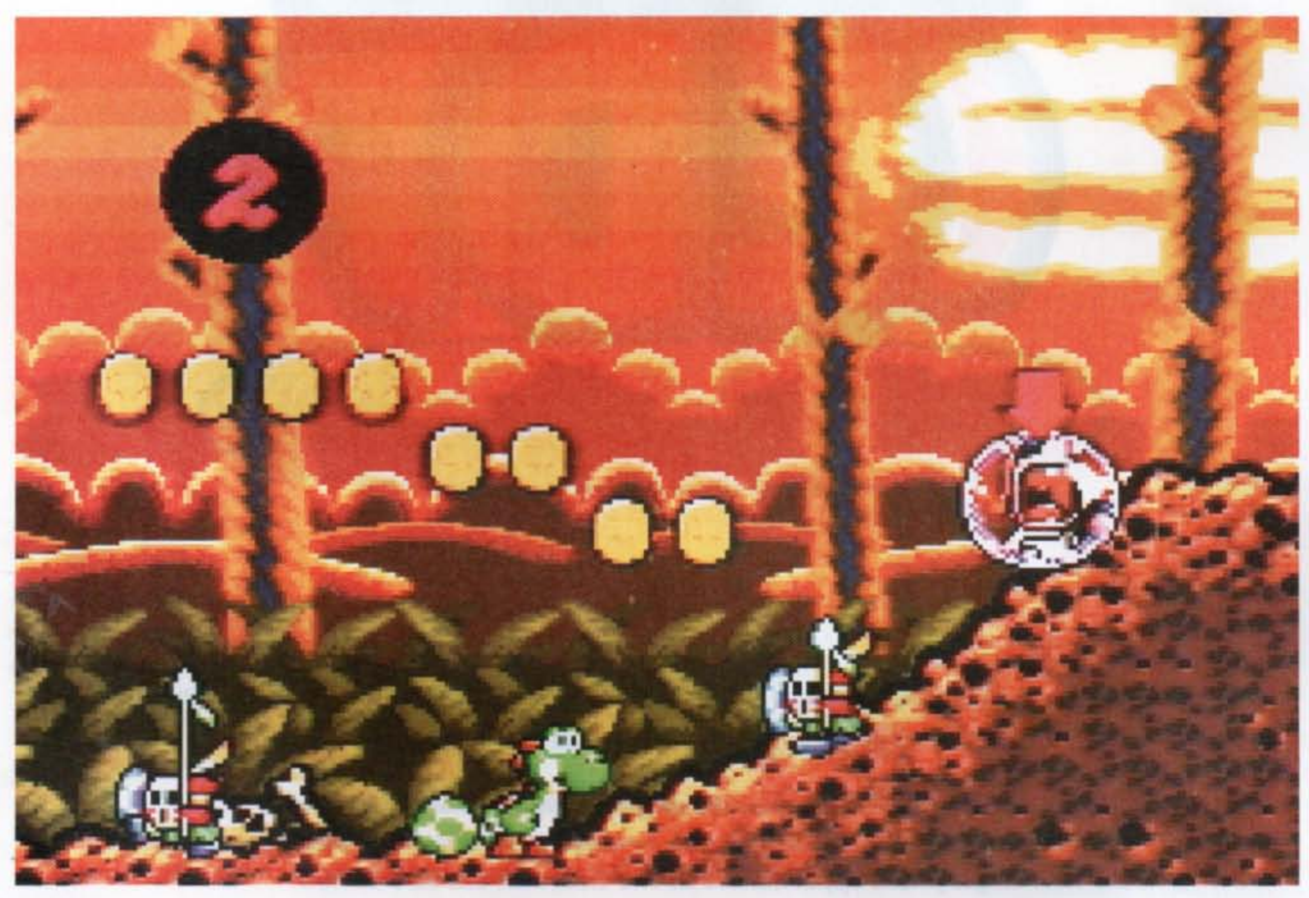


Death Keep

The follow up to last year's lukewarm 3D roleplaying title *Slayer*, SSI's *Death Keep* utilises an updated polygon engine which generates a markedly more impressive 3D game world. Unfortunately, the individual level designs lack imagination and are conspicuously short on character.

Yoshi's Island

Super Mario World 2



The object of *Yoshi's Island* is to safely transport Baby Mario through the six worlds in the game. Should Yoshi take a hit, Baby Mario will be knocked off the amphibious one's back and float around screen in a bubble. Is Yoshi fails to retrieve him before a timer reches zero, that's one life lost

Format: SFC
Publisher: Nintendo
Developer: In-house
Price: ¥9800 (£73)
Release: Out now (Japan)
October 2 (US)
February (UK)

A *Mario* game without Mario? What could Shigeru Miyamoto have been thinking of? What he usually thinks of, of course, namely creating a game that's as enjoyable as it is innovative, as compelling as it is charming.

Designed to take advantage of the Super FX cartridge chip which allows large scale object scaling and rotating, *Yoshi's Island* is an example of what every good videogame should be – a fusion of technology and creativity, each enhancing the other.

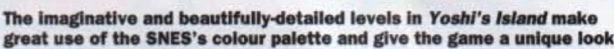
The essential elements of the *Super Mario* gameplay, that has sold 117 million cartridges to date, remain unchanged in *Yoshi's Island*. The two-button run 'n' jump control mechanics with which *Super Mario Bros.* defined the platform genre are intact. There are still coins to collect to gain extra lives, enemies can still be destroyed by a quick jump on the head, and the goal of the game is still to reach the end of the increasingly tortuous levels.

But it's what's been added to *Yoshi's Island* that raises it above other platform games. The discovery of these new features is a major part of the pleasure of playing.

First, there's Yoshi himself. Second billing in *Super Mario World* has given way to a starring role in the sequel, and his abilities are the starting point for the whole game. Most important is Yoshi's egg-laying power. Using his tongue, he can grab an enemy character





The imaginative and beautifully-detailed levels in *Yoshi's Island* make great use of the SNES's colour palette and give the game a unique look







Complete every level, collecting 100% of the coins and flowers available and with all 30 life stars intact, and two new levels will be revealed on the map (top). The first world is an automatic scrolling trip through a lava-filled level. Ride the dog over the lava to reach the end safely

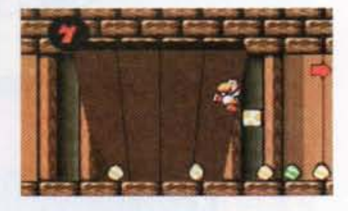
and, by means of a pull down on the joypad, swallow them. He then lays an egg which he can fire to take out other enemies or hit out-of-reach bonuses. Yoshi's other skills include limited flying and a ground dive used to drive objects into the ground and burrow through 'soft' blocks.

After eating a watermelon, Yoshi is temporarily able to spit out seeds like a machine gun and, after swallowing a fiery monster, he acts like a flamethrower. Then there are special transformation bubbles which turn him into a helicopter, a motorised mole, a submarine or a car, all of which are used to access new areas. Even Baby Mario can get in on the action – a star turns him into Super Baby Mario which makes him invulnerable for a while and allows him to speed through a level.

Touches like this are major additions to the Mario canon, comparable with the suits of *Super Mario Bros 3* and the introduction of Yoshi in *Super Mario World*. The innovations in *Yoshi's Island* allow far greater variety in terms of both gameplay and level design.

And, thanks to the Super FX chip, the levels reach new heights of fantastical experimentation here. There are simple polygon effects like drawbridges dropping out of the background, spinning platforms shaped like giant hexagonal tombolas, and see-saws teetering over lava pits. Characters are also scaled and rotated: instead of using individual frames of animation, enemies now roll backwards if Yoshi spits them out, and level bosses are giant-sized versions of standard enemy characters enlarged, before your very eyes, by the game's villain, the wizard Kamek.

But most impressive of all the Super FX-inspired tricks are the special levels. On one forest level, strange fluffy fungi float across the

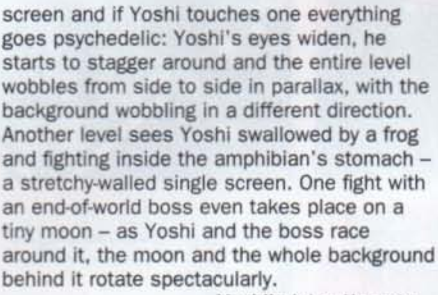
***Yoshi's Island* puts its SuperFX chip to many inventive uses including this huge drawbridge. Walking in front of it causes it to drop and flatten poor Yoshi**

Each of *Yoshi's Island's* end-of-world bosses is a giant-sized version of one of that world's monsters. Arch-villain Kameca expands the monster before your very eyes



Eat one of the strange fungi on this forest level and the whole level sways as Yoshi comes 'under the influence'

Continued



screen and if Yoshi touches one everything goes psychedelic: Yoshi's eyes widen, he starts to stagger around and the entire level wobbles from side to side in parallax, with the background wobbling in a different direction. Another level sees Yoshi swallowed by a frog and fighting inside the amphibian's stomach – a stretchy-walled single screen. One fight with an end-of-world boss even takes place on a tiny moon – as Yoshi and the boss race around it, the moon and the whole background behind it rotate spectacularly.

Yoshi's Island boasts such a huge collection of special effects, tricks and creative flourishes that you could be forgiven for thinking that it's a bit empty on the gameplay front. Simplicity was always the key to the success of the *Super Mario* games, and surely overdosing on extras would kill the heart of the game? Well, the Mario series has never been short of spectacular moments and *Yoshi's Island* merely takes things about as far as is possible on the Super Nintendo. What's far more important is the way all the effects are integrated into the gameplay and how challenging yet approachable the game is.

The task of transporting Baby Mario across each level is straightforward enough and cleverly handled. Should Yoshi be hit by one of the enemy characters, the tot is knocked off his back and floats off in a balloon. A timer counts down and if Yoshi doesn't get him back before it reaches zero, Kamek's minions take Mario away. To boost the timer to a maximum of 30 seconds, Yoshi can collect small walking stars stored in bonus clouds.

The tiny stars also serve another purpose: if Yoshi finishes a level with the maximum number of 30 stars and collects every flower and red coin on the level, his level score reaches 100. Finish all eight levels on a world





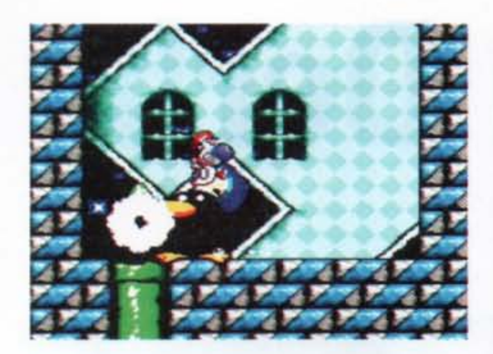






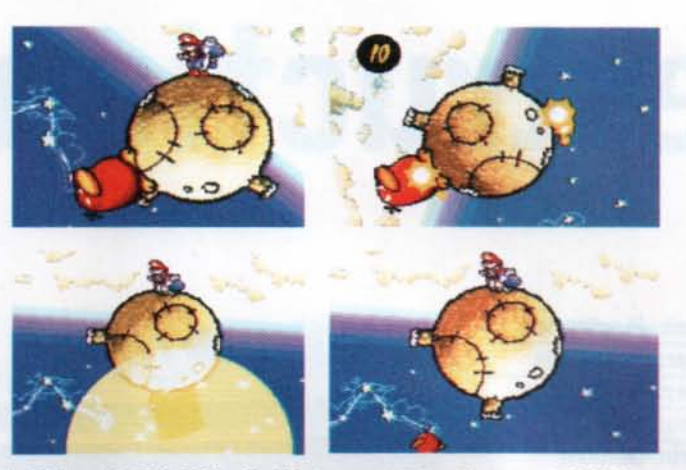


The Super FX chip, first seen in Star Wing, has been implemented to great effect in *Yoshi's Island*. Although the chip makes some scenery appear polygonised, the 3D effect creates stunning visual effects. This rotating barrel (bottom left) would not be possible without the FX chip





Yoshi grimaces after taking a hit (top). At the end of each level, Yoshi hands Baby Mario over to another, different-coloured Yoshi (above)



At the end of World Five Yoshi is transported to a tiny moon to fight the boss. The entire screen rotates as Yoshi runs around the moon trying to jump on the tree stumps and push them out the other side into the boss

with this 'perfect' score and two hidden levels appear. And so the game can be played in two ways – as a 'simple' romp through every level, or as a far harder quest for the hidden worlds. Trying to perfect every level is a major challenge, and there's a host of surprises lying in wait for players willing to explore.

Everything in *Yoshi's Island* – from the placement of platforms to the endearing rough-edged graphical style – reveals an attention to detail that few games can match. After mastering the new controls, it's all down to the player's own ability, a thorough search of each level and a bit of lateral thinking. Only the linear design will disappoint Mario veterans. After the genuine exploration aspect of *Super Mario World*, the rather basic set-up in *Yoshi's Island* – level one leads to level two and so on – is something of a step backwards.

That aside, *Yoshi's Island* is a welcome addition to the series – as playable, challenging and entertaining as the best of the other *Mario* games. Thanks to the Super FX chip, there are some wonderfully inventive touches which make each new level a reward to the player and act as an incentive to play on. Inevitably, *Yoshi's Island* will have less impact than the SNES debut game *Super Mario World*, but all the qualities of the *Mario* games are present in *Yoshi's Island*, and it safely leaves every other platformer in its wake. Let's hope Miyamoto and his team can be as creative with the technology at their disposal in U64 *Mario*. E

Edge rating: Nine out of **ten**



Kameca creates a boss (top left), up among the platformless clouds (top right), spitting watermelon pips (above left) and walking on water with a platform wheel (above right)



As in Super Mario World, the toughest levels are the ones that relentlessly scroll automatically

Destruction Derby

Format:	PlayStation
Publisher:	Psygnosis
Developer:	Reflections
Price:	£45
Release:	October







The top three cars are arrowed but it'd be useful to have player names over the cars in link-up mode. At the crossroads (middle) it's all down to luck. Tyres smoke as the bonnet crumples (bottom)





The action can get pretty hectic at times. But even when 15 cars are on screen, the slowdown is minimal



Score race points by causing spins, crashes and finishing off crippled opponents

As ome games really should be held back until they are perfect, and *Destruction Derby* is one of them. It has many of the ingredients of an exceptional title, but the recipe seems inexcusably flawed.

It's particularly annoying, as some of the imperfections could have been corrected so easily. The central problem with *Destruction Derby* is that the tracks are too narrow. In a racing game of any nature you should be allowed to race as fast as possible, and other factors should affect this. In *Destruction Derby* you just tip-toe around the track trying not to smash into the barriers on the right-angled corners. The courses are only a couple of cars wide – it's impossible to feel the car and get any sense of satisfaction out of the driving alone. Sure, you'll marvel at the first few smashes, but after that the other cars just become a spectacular annoyance. There's also no real sense of achievement in practicing and discovering the perfect racing line, when you're hindered in this way.

What needs most work, though, is the control: the car just feels wrong. Even racing the professional car, you can't powerslide like you can in *Daytona USA* or *Sega Rally*. It's always a question of slowing to take the corners, rather than using your skill to negotiate them as smoothly as possible.

Some of the tracks contain crossroads, which seems like a great idea. But not when you get wiped out and smashed down the





All three cars (above) exhibit very different handling characteristics







As the car deforms (above) the miniature in the bottom right of the screen portrays the damage. Contact on the rear is not too serious, but you'll blow the engine if the front takes too much. Another rear-end shunt (inset)

wrong intersection. After a 630° spin you have no inkling of which way you should head back. The camera spins round uselessly in an attempt to guide you, but a couple of textured arrows on the tarmac would be far better.

Having said this, *Destruction Derby* is still good fun to pick up and play. For instant thrills it does deliver. Watching your car slowly disintegrate always elicits winces of pain and hitting an opponent's car at right angles at full speed is guaranteed to sends howls of derisive laughter their way. And the two-player link-up game only heightens the experience.

The in-car view is by far the most exciting, although playing from within the car is impossible on the two crossroad courses. The sound is also good, but the limited number of voice samples means you get predictable responses after just a few plays.

Destruction Derby is only the second game to utilise the link-up cable facility. But racing against another person isn't quite as exciting or addictive as you'd expect. The conventional tracks are too slow, and the feeling of chasing is reduced because there is never any real sensation of speed. The destruction bowl is quite amusing at first, though. Pursuing a crippled friend at top speed fuels those worrying sadistic urges, but the bowl's gameplay is once again flawed. To make contact skillfully at speed requires planning, and the field of view is just too narrow.

Destruction Derby is undeniably good fun but it is marred by simple faults that should have been picked up during playtesting. It's time that publishers realised that holding a game back for a few months to perfect the gameplay (as opposed to adding more pre-rendered footage) isn't a crime.

Edge rating: **Seven** out of **ten**









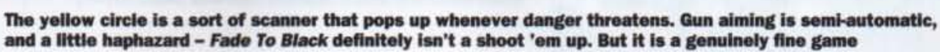


Every course looks different, but they all eventually play the same. The lights in the city and the sunset are pleasing to zap through

Fade To Black

Format:	PC CD-ROM
Publisher:	EA
Developer:	Delphine
Price:	£45
Release:	September




The yellow circle is a sort of scanner that pops up whenever danger threatens. Gun aiming is semi-automatic, and a little haphazard – *Fade To Black* definitely isn't a shoot 'em up. But it is a genuinely fine game





The intro shows Conrad drifting through space in his escape capsule, being sucked into a huge spaceship, and then being defrosted by the aliens

Delphine was creating interactive movies before FMV was even thought of. Its early adventures, *Future Wars*, *Operation Stealth* and *Cruise For A Corpse*, were thrillers, with intriguing characters and surprising plot twists. And with *Another World* and *Flashback* it combined fast-paced platform hopping with exciting cut-scenes to produce perfect action movies. With *Fade To Black* it has continued this trend, producing not only its finest game yet, but also an autumn blockbuster to rival anything starring Bruce Willis or Sylvester Stallone.

Delphine's first stab at 3D graphics isn't technically groundbreaking, though. There are no rooms above rooms here or six degrees of freedom. Sophisticated light sourcing is entirely absent, and texture mapping is used sparingly on the scenery, and avoided altogether on the characters. But *FTB*'s overall appearance is attractive and thoroughly Delphine. The subtle pastel colours will be instantly recognisable to *Flashback* players, and the level of detail in some rooms is extraordinary – witness the intricately constructed spaceship in the hanger at the end of the first level or the bubbling liquid in the jars in the laboratory. Even the install program is a visual treat, with a spinning 3D menu and a great tunnel sequence when you exit from it.

Where *Fade To Black* succeeds most of all, however, is in creating a storyline that's strong and exciting, but which allows you to feel that you're moulding events rather than merely watching passively. While in reality you're just solving puzzles and performing tasks in a strictly predetermined order, the game is presented in such a way – with incoming messages from rebel HQ, and nasty





Arachnophobics will not find the third level to their taste, with its dark passages crawling with spiders and terrifying spike-wielding baddies

***Fade To Black* has many tense moments, not least of which is this stand-off with the prison governor at th end of the first level. Get the key, then do him**

surprises from your alien foe – that it always seems fresh and spontaneous. And the most obvious route through a level isn't always the most productive – shoot the chef near the beginning, for example, and, although you may not realise it at the time, you'll be denied access to a secret room containing some exploding bullets.

Taking control of Conrad is probably the closest most of us will ever come to actually being James Bond. He sprints around the corridors with seemingly inexhaustible energy, leaping over force fields, opening lockers and ducking under alien bullets. Press the aim button and he whips out his pistol, the camera zooming in close to give a view over his shoulder of the target.

There are loads of Morphs to destroy (some of whom cunningly disguise themselves as civilians) and a variety of fiendish robot guards. And, as in the best action films, there are plenty of 'good bits': a tense stand-off with the prison governor near the beginning; an exciting shoot-out with some Morphs hiding behind crates; a great bit where you've got to escort a doddery old professor to safety while he keeps shouting 'Wait! Slow down! I'm only an old man!'; and some frightening guards who come running towards you down corridors and tear open your stomach with their claws unless you gun them down fast enough.

Even the pre-rendered sequences add to the game, appearing between levels to explain the intricacies of a plot which reveals more dark secrets about the sinister aliens we met



You must escort this professor to a teleporter, fighting off baddies, and the urge to shoot him

in *Another World* and *Flashback*. While Conrad's been away destroying the alien planet, it turns out that the aliens have been invading Earth. Most of humanity has been enslaved by them, but a small resistance group is refusing to succumb, and Conrad joins up with them. As the game unfolds, the aliens turn out to be rather more sophisticated than the dumb guards we've met so far.

The only flies in the ointment are the death scenes – when Conrad takes one too many bullets, rather than seeing him die in his polygonised form we're switched to a short rendered sequence instead, which spoils the continuity a bit. Apart from that, and an absurdly complicated control system using at least twice as many keys as can possibly be necessary, *Fade To Black* is one of the most enjoyable PC games ever created.

Edge rating: **Nine** out of **ten**



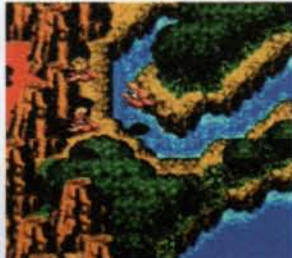




Some day, all installation programs will be like this. Loading and saving, with its rotating miniature screens, is a pleasure to use, too

Chrono Trigger











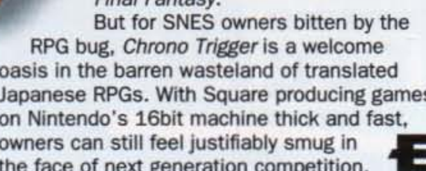
The illusion of freedom to go anywhere you want is helped by a variety of different maps and views, although ultimately the storyline will dictate whether or not you can reach a certain area.

Format:	SNES
Publisher:	Square Soft
Developer:	In-house
Price:	£60-£70
Release:	Out now (US)

The rift that exists between the Japanese and Western gaming fraternities generally boils down to one genre – the RPG. Where our Eastern cousins love nothing more than to immerse themselves in the epic lives of a band of tiny sprites with disproportionately sized heads, players elsewhere complain of basic graphics and random battles with stop-start gameplay. Or they used to.

In the past year one game has lifted the reputation of the Japanese RPG tenfold. So popular has the American version of Square's *Final Fantasy III* been that the translation of the company's next project, *Chrono Trigger*, has been as eagerly awaited as any action extravaganza.

The whole premise of *Chrono Trigger* revolves around time travel. Leaping in and out of the characters' pasts and futures in search of wizards and magic rocks seems initially confusing, but the packed storyline (courtesy of the most respected RPG author in Japan, Yuji Horii) sticks firmly to the RPG tradition of linearity. Even if you can go everywhere, nothing happens unless it advances the story.



Although the game's battle engine is still turn-based, Square has made an effort to rework it. Not only can characters combine their powers to create a super attack, but their opponent's position on the screen is now also important, for example.

In comparison, though, *Chrono Trigger* is more lightweight than *Final Fantasy* in almost every department. And the graphics (with characters by another Japanese superstar, Akira (Dragon Ball) Toriyama) ultimately lack the grandeur of *Final Fantasy*.

But for SNES owners bitten by the RPG bug, *Chrono Trigger* is a welcome oasis in the barren wasteland of translated Japanese RPGs. With Square producing games on Nintendo's 16bit machine thick and fast, owners can still feel justifiably smug in the face of next generation competition.

Edge rating: **Seven** out of **ten**





The key to sucessful combat in Chrono Trigger is in combining character's powers.

Bug!



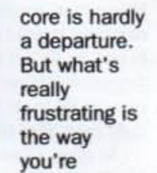
Format:	Saturn
Publisher:	Sega
Developer:	In-house
Price:	£45
Release:	Out now

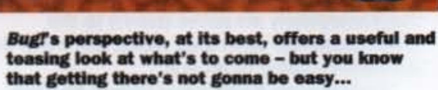
After the innovation of *Jumping Flash* and the triumphant resurrection of the *Mario* series, the pressure is on *Bug!* to claim some of the lucrative platform market for the Saturn. Of course, this being the next generation, it wouldn't do for *Bug!* not to make some sort of attempt at innovation.

To start with, you get a decent-looking 3D world, with paths leading into and out of the screen and a minimal amount of camera zoom and pull. Graphically and sonically, *Bug!* is lovely. There is all the characterisation you'd expect and a sprinkling of samples to liven things up.

After a couple of plays, things soon change, though. Where *Sonic*'s main strength was his speed, *Bug!* is positively pedestrian. Added to that, there's not much in this game to surprise anyone who hasn't played a platformer since 1990. The grasshoppers and beetles that block your progress follow preset and highly linear paths, and the jump-to-kill gameplay at the game's core is hardly a departure. But what's really frustrating is the way you're restricted within the game's world – you can see where you want to go but, instead of being able to just jump sideways, *Bug!* is more often than not confined to a single corridor.







***Bug!*'s perspective, at its best, offers a useful and teasing look at what's to come – but you know that getting there's not gonna be easy...**

In fact, when you get right down to it, the 3D graphics are a complete red herring. The bug himself is rarely in a position to do anything other than move backwards and forwards and jump. At its core, *Bug!* is nothing more or less than an extremely tough, bare-bones, almost old-school platformer. Restart points are few and far between, as are original ideas. And its few spikes and moving platforms are singularly unimpressive next to *Jumping Flash*'s first-person perspective or *Yoshi*'s rich, exploration-led gameplay.

This may be a superior game to *Clockwork Knight*, but in terms of real gameplay, it's only in pseudo-3D. Sega seems to be struggling both to make the kind of leap that *Jumping Flash* does, or to match the depth and feel of *Yoshi's Island*. Star appeal aside, it seems doubtful that *Bug!* can pick up where *Sonic* left off.

Edge rating: **Six** out of **ten**







There's no denying that *Bug!* contains plenty of endearing touches. A lot of time has clearly been spent on character animation

Zero Divide

Format:	PlayStation
Publisher:	Zoom
Developer:	In-house
Price:	£52
Release:	Out now



***Zero Divide*'s last stage is almost as graphically impressive as *Toh Shin Den*'s, with an atmospheric background made up from floating space junk**







(From top to bottom) Fighters can hang by their fingertips when knocked from the elevated fighting platforms; Io versus Io; Zero takes on the end-of-game boss character

Zero Divide, the first PlayStation title from Japanese developer Zoom (previously responsible for *Biohazard* on the Super Famicom), has a great deal in common with that most famously risible fighting game, *Rise Of The Robots*. Both use a futuristic theme as a framework around which to hang a one-on-one beat 'em up. And both are immediately attractive thanks to the efforts lavished upon their looks. But there the similarities come to an end.

Even though it has a few unique touches, *Zero Divide* is at heart a highly derivative game. It merely borrows and blends all the elements that have made polygon beat 'em ups the most significant new genre to come out of recent developments in 3D graphics.

Like Takara's *Toh Shin Den*, it mixes close-quarters combat with ranged attacks, and it adopts *Virtua Fighter*'s simplistic three-button control method, which gives each fighter one strength of punch and kick, as well as the ability to block. Each fighter's wildly varied attacks are achieved by means of a number of methods. For example, you can get a host of special punches by simply holding a certain pad direction along with an attack button. The more spectacular ones – like those that involve launching projectiles – demand joypad movements more akin to those in *Street Fighter II*. Attacks can be tagged together for the now obligatory fatal combination moves, with a combo indicator duly awarding bonus points.



With metallic limbs aplenty and close-quarters combat the focus of *Zero*'s action, things can occasionally get rather confusing

In play, however, *Zero Divide*'s nearest relative is *Tekken*. Although it runs at a slightly slower speed than Namco's game, and it never quite matches the same impressive level of fluidity, it nevertheless plays solidly and is still exciting enough to play.

Ironically, though, the game's most unique feature – its over-the-top character design – is at times also its biggest drawback. During fights between the more complex combatants, limbs and seemingly extraneous body parts seem to flail about in a blur. It's possible to get slightly lost in the midst of it all. But even



Stamps are among the easiest blows to deliver but rank as some of the most satisfying



1 Owing much to the Bandai school of design, Draco is reminiscent of many Japanese robotic dinosaur creations. He's slow but strong. 2 Bearer of the game's most conventional weapon, Wild3 shoots his blaster when commanded with a *Street Fighter II*-style fireball joypad movement. 3 As *Zero Divide*'s equivalent of Ken or Ryu, Zero is the supposed all-rounder among the fighters, with character design that is basic and utilitarian. 4 Like Zero, Eos is a fairly plain character. 5 Cygnus uses an energy sword which owes a great deal to Luke Skywalker's lightsabre. 6 The only female character in the game, Io is the fastest and most lithe of all the fighters. Her alter-ego is resplendent with a leopard-like paint job. 7 Tau's design is based on a scorpion, with four legs and a prehensile tail. Setting two Taus against each other makes for complicated and hard-to-follow action. 8 Nereid is the most complex of all the characters in terms of design. His chest-mounted drill arrangement impales, then spins opponents

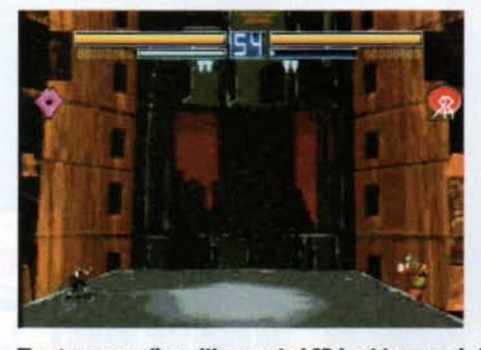
though *Zero Divide* lacks the immediacy of other games featuring human characters, it claws back some lost ground thanks to the sheer attractiveness of it all; expert shading is evident on all the fighters, while backdrops are bold and vivid.

Numerous game-camera options are available, including 'standard', a straightforward side-on variety; a 'rolling' mode, which freely rotates around the combatants (and proves to be hard work to follow on occasion); and 'player', which focuses on the action from just behind the shoulder of player one's character (it, too, proves far from ideal in practice).

Zero Divide is also the first game of its kind to offer extensive replay options. While *Virtua Fighter* and *Tekken* merely replay a snatch of the bout, showing the victor's winning strikes, battles in *Zero Divide* can be replayed from start to finish. A selection of favourite fights can be saved to memory (and from there to a memory card), and, during a replay, the viewer is able to rotate and pan to view the action from just about any angle.

Basically, this game is everything *Rise Of The Robots* should have been. Even though genuine innovation is thin on the ground (apart from the imaginative character designs, of course), and it can't boast the long-term playing potential of *Tekken*, it's still one of the most polished games yet to be released for the PlayStation. It will certainly further endear Sony's machine to die-hard beat 'em up fans – as well as to anyone who appreciates its blend of extraordinary character design and solid gameplay.

Edge rating: **Seven** out of **ten**





The game complies with accepted 3D beat 'em up wisdom by offering a game camera which pans right back to provide dramatic long shots (above left). A less orthodox camera option (above right), which follows the actions of one specific character, offers many spectacular views and sequences

It's impossible now to imagine videogames without platformers. **Edge** revisits the game that defined the genre more than a decade ago

Jet Set Willy



The Master Bedroom. The charming Maria is blocking your way to a peaceful bit of shut-eye. Collect all the flashing objects by midnight





Impossible Mission owed a lot to levels like this (top). Failure was met with some unusual sole compaction (bottom)

Format:	Spectrum
Publisher:	Software Projects
Developer:	Matthew Smith
Price:	£5
Players:	One
Released:	1984

The most successful genre in the history of videogames was invented just over ten years ago by Matthew Smith. Looking back though it's impossible to see why no one else developed the platform game a decade before that.

Manic Miner was the first platform game but its structure ans 20 levels made it a much less rewarding game than its sequel. *Jet Set Willy* marked the platform game's evolution into its present form. The addition of exploration, collection and strategy elements combined to produce a highly addictive game.

Playing it again today, it's easy to see why it was so popular (over a million units were sold in the first year). At the time nothing like it had ever been seen before. Crammed into a minuscule 48K were around 100 levels, each with its own selection of platforms, enemies and challenges. The urge to find new rooms ensured that you continued to quest. The aim of the game was to collect all the scattered flashing objects within a time limit to gain access to the master bedroom plus complementary wife).

It's both refreshing and disillusioning to realise how much yet how little platform games have evolved since *Jet Set Willy* was released. On the plus side, *JSW*'s pixel-perfect control would not be tolerated today. Every move you made had to be spot on; the game's flip screen structure meant failure with one life could result in losing all ten at once.

On the other hand, the basic gameplay elements (platforms, ropes, pits and combinations thereof) have progressed little since then. Only with classics like *Mario* and *Sonic* do you really feel as if you're playing something genuinely unique.

Jet Set Willy has aged better than most other titles of its era and will always be fondly remembered as a fine game. Sadly, so few platformers since then have been as memorable. It's hard to reinvent an idea as simple as the platform game but if it is to evolve the industry needs more *Jumping Flashes* and less *Shin Shinobi Dens*. E



Rooms with this number of easily collectable objects were a welcome relief

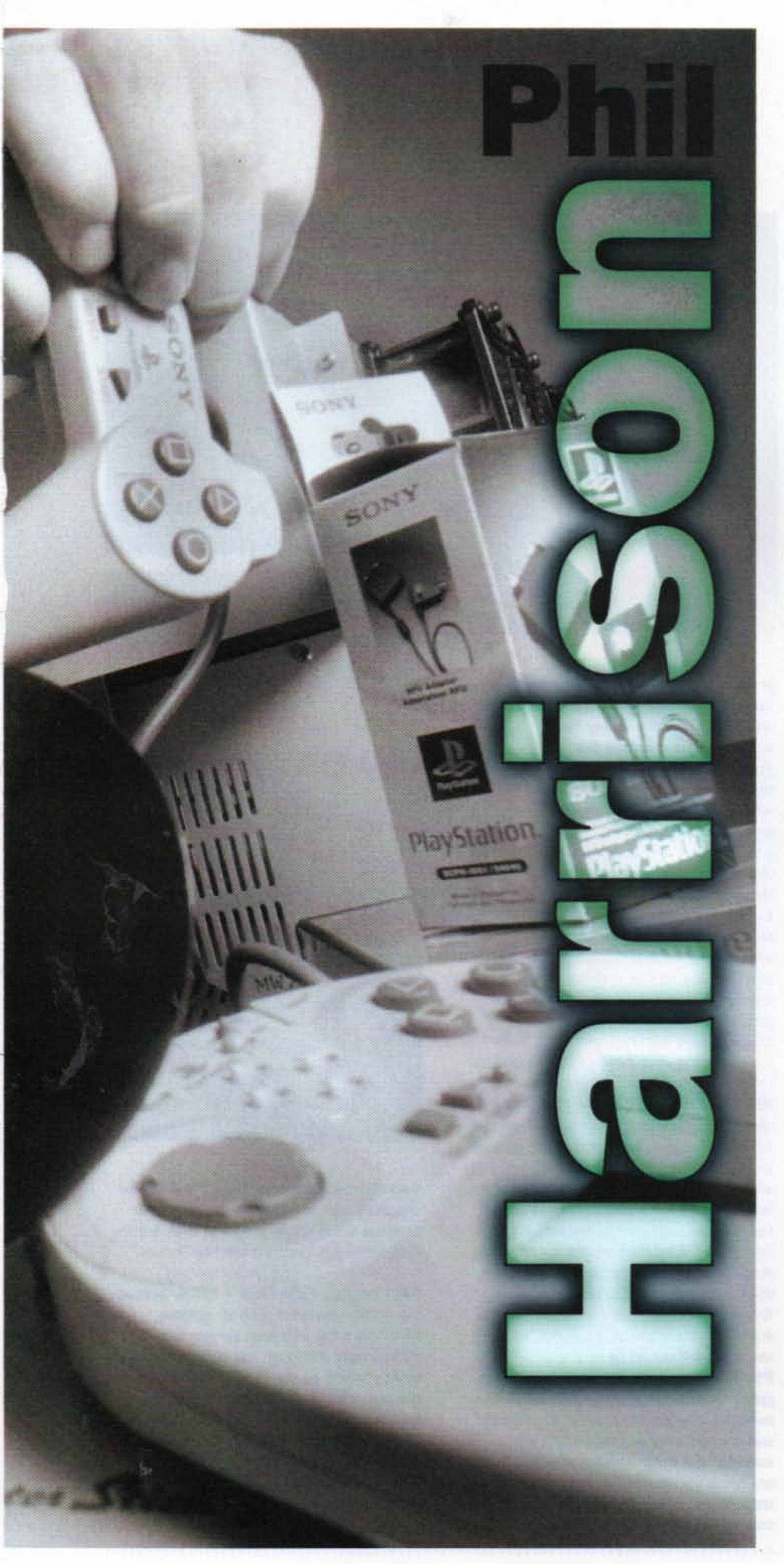




Pixel perfect control (top). The first rope swing in videogames (bottom)

An audience with...

Photographs: Jude Edginton



With its eagerly awaited hardware launch now upon us, Sony has every right to feel confident. As the company prepares to open the PlayStation floodgates, **Edge** quizzes one of Sony's most committed evangelists on what the future holds

Phil Harrison has witnessed the PlayStation's evolution since the very beginning. Having joined Sony in 1993 as product development director, he immediately went underground to start the console's European development and support group, working closely with the Tokyo R&D team, which was completing the hardware and OS design. One of his key objectives was to spread the PlayStation message to the development community in Europe, as well as to hire talented technical support staff and software engineers (to whom Harrison refers as the 'unsung heroes' of the European division). Now, as communications director, he is heavily involved with the European marketing strategy for the machine. **Edge** spoke to him at SCEE's London HQ.

Edge In personal terms, what has been the most rewarding part of the PlayStation's journey to market?

PH Simply that the reality of the finished machine exceeded my expectations in every way. In fact, as the development process went on, the games were getting better and the hardware and OS were getting stronger. Normally in this business it's the other way around, with the end result being somewhat underwhelming. On the whole, it's been a tremendous challenge and experience to follow the project from the very early days of hushed tech specs and a shroud of secrecy to the massmarket launch. I don't think there will ever be another opportunity like this one, and I sometimes feel like I've got the front seat on

Continued next page

interview

the most amazing rollercoaster ride you can imagine.

Edge Given that the PlayStation is a small grey box attached to a SNES-style joypad, do you believe that it is as innovative as that seminal Sony product, the Walkman?

Phil Harrison Well, the Walkman revolutionised the way people listen to music – taking it outside the confines of their home or car for the first time. It made people think differently about the part music played in their lives and became a cultural icon. The PlayStation is certainly a dramatic innovation but not an invention like the Walkman was in the 1970s.

Edge When you look at the PlayStation as a complete system, what aspect of the design appeals to you most?

PH Every part of the machine – from the sleek outer case design, the ingenious memory cards and the ergonomic controllers through to the chipset – has been so well designed. It feels like a complete product – no element has been rushed or compromised. It also feels like a Sony product – you know you're holding 40 years of innovation and quality. Then when you look at the price we've achieved, it becomes even more remarkable.

Edge Was the machine's development a long and laborious process?

PH Yes, but it was also a very interesting process. The very first thing I had was some written specifications which were, at that time, half-reality, half-blue sky. I just remember the first time I read through those specs and I thought, hang on, this must be a misprint! This can't be real! Then the next thing I saw was a videotape and that was about two years ago. That videotape was just a first inkling of what PlayStation was all about. It had some demonstrations actually coming off the chipset in prototype. This chipset was running about 30 per cent throughput and it was staggering, unlike anything I'd seen before. And then we had this first 30 per cent hardware prototype in at the end of 1993 – a great big box about the size of a desktop photocopier – and it was all grey metal and very, very ugly. And it had two huge fans inside it to keep it cool – it sounded like the thing would take off when you turned it on!

Edge That must have been around the time that developers got to see it...

PH We showed it to about 100 developers in December 1993. I remember reading the article in **Edge** [issue 6] and smiling at your frustration because no-one would tell you anything about the machine. We had everyone sign a non-disclosure agreement before we let them see the



presentation. I invited the cream of the European developers to our office where we'd taken over an empty floor in the building and gave this presentation about the technology and the objectives we had for the business. It was great to see the best programmers and designers in the country with open mouths thinking exactly the same as I had when I'd first seen the technology – excitement mixed with a big dose of disbelief. We had to prove to one well-known developer that the demos ran off a real prototype and not an SGI.

Edge Now it's in the high street, is its superiority over the competition quite as pronounced as when it was still a secret?

PH Yes, completely. While PlayStation is clearly the most powerful technology, the real supremacy is the fact that the games are the best and that there are some really amazing games starting to appear over the horizon. I'm even more confident now because the reality of games like *Wipeout*, *Tekken* and *Total NBA* proves it's not hype. And it's not just me saying this any more – the whole industry is saying it for us now.

Edge So what in your opinion is the most impressive example of the PlayStation's technical abilities so far?

PH There are two. *Total NBA* is the first game nearing completion from within our in-house development studio in London and is a real tour de force when you consider the sheer volume of polygons that are being drawn and the speed and smoothness of the motion-captured animations for the players. I also can't resist a smile whenever I see the dinosaur demo. I know we've been showing it for ages but it still stops people in their tracks.

Edge Has any game on the PlayStation truly lived up to your expectations?

PH I suppose *Ridge Racer* – mainly because the arcade game set such an obvious benchmark for everyone to use as a comparison. Although the polygon count is slightly lower on the PlayStation version, the gameplay is actually better than the arcade, and that's what counts – Namco did a fantastic job with the conversion in a very short period of time.

Edge Do you think that Japanese companies have irreversibly taken over as the world leaders of videogame design?



PH No, I don't. At Sony we've taken a global view of the software development investment in PlayStation and are working hard on three continents. I think the UK has the finest design talent in the world. Peter Molyneux is the best example, but Geoff Crammond, David Braben and Dave Perry are all British and can comfortably sit alongside the best in the world. There's also a host of unsung talent in this country who will find themselves added to the list.

Edge Has the PlayStation seen a game yet that defines what the machine is about?

PH Yes and no. Yes because the machine's all about delivering a fantastic gameplay experience that is challenging and sophisticated, looks amazing and sounds great – there are many games that fit that description that I've already mentioned. But by its very nature that's a moving target. There are so many talented people working on the machine now, doing things that we've not dreamed about and in ways that we've not seen before, that the definition of quality is almost impossible to define in terms of time. In the future we'll look back at some of the launch games and snigger, whereas we hail them now as paradigm shifts in interactive entertainment – that's what makes this business so exciting. The increase in the technology of game development yields a bigger and better result all the time.

Compare our business to the movie business – did awesome computer graphics make *Jurassic Park* a better story than *King Kong*? I suggest not. Some of the best movies ever made are now approaching 40 or 50 years old. While we may have a nostalgic fondness for the 8bit heroes of yesteryear, they don't compare to the new games of today. Try comparing *Tekken* to *Karate Champ* on the Atari VCS or *Ridge Racer* to *Pitstop* on the C64.

Edge What kind of software would you personally like to see on the console?

PH Well, I enjoy the adrenaline rush of a fast 3D game but I crave for something more substantial, more cerebral – a game I can relate to on more than a reactive level. I want characters that I can relate to, argue with, be scared by, be attracted to and that have an appeal beyond the quality of the graphics. To use the movie analogy again, I think we can do the plots, the sets, the special effects and the camerawork incredibly well. We just need to work on the stories and the actors. This will add real emotional levels to gameplay that we're only just beginning to experiment with as an industry.

Edge If anything negative could be levelled at Sony so far, it's that it still hasn't proved it can develop a world-class videogame. What is SCE doing to rectify this problem?

PH Firstly, I don't think it's strictly true. I would consider *Wipeout* and *Destruction Derby* world-class products and they were created by Sony Interactive Entertainment. Certainly, the review scores would back that statement up. If you mean why haven't we created a *Sonic* or a *Zelda* yet, then I'd say Rome wasn't built in a day. Sony has built a world-class hardware system and we are now investing many millions of dollars, pounds and yen to grow our software development resources to create games to match. This level of investment means that Sony is backing the system 100 per cent. Having said that, we do not seek to have a dominant position in the supply of software for the PlayStation. That would restrict the investment and creativity of our thirdparties, who are vital to our success – as a platform and as a business.

'Sony has built a world-class hardware system We are now investing millions to create the games to match'

Edge It's been said that future PlayStation development could yield less spectacular technical advances than we might see on the Saturn. Is this a realistic viewpoint?

PH The thirdparties all say that PlayStation is easier to program than the Saturn because of our libraries and powerful operating system. We are constantly upgrading and improving the libraries we supply to developers so that game development is easier and quicker. This means programmers can harness more of the power of the machine – thus delivering greater value to the player. Sega do not take the same approach so I can't comment on how their games might improve.

Edge Do you think that CD-ROM has helped or hindered the videogame in the case of the PlayStation?

PH It has helped at every single level. Technically it has allowed us to design a system around the benefits of CD – with CD digital audio, full-motion video and

Continued next page

massive data storage for graphics and texture maps – something you can never do with a cartridge. From a creative software development standpoint, CD is the format of choice for the world's leading developers. They enjoy the freedom it gives them in terms of design, and it inspires innovation. When a designer can call upon CD audio and video to augment an interactive experience, the possibilities are endless. Cartridge development is a process of overcoming technical and commercial hurdles that get ever more difficult to cross. From a business point of view, CD allows publishers to innovate and take risks with games. Cartridges take months to make, cost so much money and have so many restrictions that publishers can't afford to experiment. They have to go for the proven gamestyles to make money – hence the fact that most Nintendo cartridge games looked the same and played the same. Thirdparties can't take creative risks when so much money is at stake. The CD model is much more conducive to creative innovation, because they cost less, hold more information and take days to manufacture.





Edge Sony has deliberately targeted the non-videogame punter for the first part of its PlayStation advertising campaign. Is everyone really convinced that the massmarket consumer will be prepared to shell out £300 for a games machine?

PH We've been spreading the message to a very wide audience – including all the games magazines. But it was a deliberate part of our strategy to reinvigorate the consumers who had moved away from games through boredom with the Sega and Nintendo market, and so we reached them though the style press. The main thrust of the advertising campaign will be truly massmarket. For the first time the technology can deliver an experience that will convert people who have previously resisted gaming as a leisure activity. Gaming is no longer a hobby or niche pursuit but a legitimate entertainment sector – alongside movies and music. The visual and audio quality of a PlayStation attracts so many more people to the concept of owning one. We have a PlayStation sitting in the reception of our office and its amazing how many people who have clearly never picked up a joystick in their lives are grinning insanely as they spin the car in *Ridge Racer*.

Many people who played games in the early 1980s who have either got bored or 'grown out' of their 16bit machines are tempted back by PlayStation. I test games on friends of mine who haven't been into games for a few years who are staggered by the quality of what they see. They are immediately interested – particularly when they find out it's 300 quid. They'd actually be prepared to pay more. I agree they are in jobs and have disposable income, but I'm also staggered by the amount of money people who are still at school will spend on a new pair of Nikes – over £100! Makes me sound old!

Edge What is the PlayStation's most dangerous rival – either now or in the foreseeable future?

PH Our biggest rival is apathy in the market, not a single company or product. What's important is that we're not just trying to beat one company or another for short-term gain but the fact that we are seeking to reinvigorate the market. In terms of consumer spend we are fighting for the same £300 that could be spent on a mountain bike, a stereo or a couple of pairs of designer trainers. That's where the real battle is – ensuring that PlayStation is seen as a quality product with longterm benefits by a mass market.

Edge What solid reasons are there now for buying a PlayStation? What's to stop people waiting for the Ultra 64?

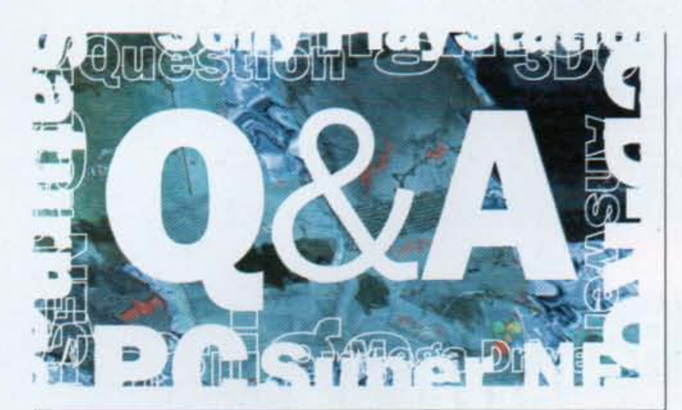
PH *Tekken, Wipeout, Destruction Derby, Ridge Racer, Battle Arena Toh Shin Den, Mortal Kombat 3, Total NBA*... There are seven good reasons between now and the end of 1995. And that's a pretty impressive start by any standards. Obviously I'm biased, but Nintendo haven't got proven technology to work yet and there are no games visible – there's nothing to wait *for*!

Edge And 3DO? Do you think it can fight back with M2?

PH No, not really. I don't think the development community will listen the second time around. Without a pricing, software or marketing strategy, how can they compete? 3DO was launched in a tough market dominated by Sega and Nintendo. They showed that in order to be successful you need strength in many different areas: brand, marketing, software catalogue, technology, consumer price, manufacturing supply and retail trade support. If you lack one or more of these you seriously effect your chances.

Edge What kind of lifespan can PlayStation owners expect from their machine?

A long and happy one! We designed the machine to last – we are not intent on the obsolescence and self-destruction of something we've worked so hard to get right. The strength of the software in development will take us comfortably into the future. EDGE



Send your **questions** to Q&A, **Edge**, 30 Monmouth Street, Bath, Avon BA1 2BW

Q I own a Japanese PlayStation and a Sony TV. I need to know why I get two quite different results via these connections: with SCART I get a crystal-clear picture, but it's pushed slightly to the left, and the sound isn't stereo. With the lead supplied with console, consisting of yellow, red and white plugs, I get a less clear picture, but the picture is central and sound is in stereo.

Richard Barker, Leeds

A A Scart connection gives the best quality picture because it allows for the separation of the red, green and blue (RGB) channels, so reducing the level of interference. With the NTSC machine the picture often gets displayed slightly to the left exposing a small black border on right – quite why this is, **Edge** isn't sure. But the failure to get stereo sound out of this Scart connection implies that the Scart plug has been incorrectly wired up. Contact the supplier of the lead and suggest that it needs modification. The second method you describe is a composite connection, and mixes the RGB channels into a single video signal giving a blockier, fuzzier picture. The yellow plug is the combined video signal, and sound is taken directly out of the left and right audio-outs.

Q **1.** While I realise that Nintendo has never produced a dud console, I am a little concerned that the Virtual Boy is missing the point in terms of design and overall aims. As with the Game Boy, colour display was ditched to prolong battery life, but since it's not portable, what's the point? The VB is designed to be a table-top console, so why can't it plug into the mains?
2. What sort of spec PC would be needed to equal the performance of the PlayStation or Saturn?
3. Please could you explain what alpha channel effects are.

Stephen Virgo, Shoreham-by-Sea

A **1.** An AC adaptor for the Virtual Boy is available in Japan and the US. It plugs into the joypad handle.
2. Even a 100MHz Pentium would find it tough to match the quality of 3D on the PlayStation and Saturn. A Pentium CPU is a powerful unit, but the lack of customised graphics hardware means that it simply can't compete in the battle of pyrotechnics. The race is now on to find a PC graphics card that the games industry will support (Creative's 3D Blaster and nVidia's NV1 are two examples).
3. While standard colour is made up from the RGB channels (red, green and blue) an alpha channel allows the fogging and transparency of graphics. Some PlayStation and Saturn titles exhibit such effects, although a true alpha channel can address each pixel.

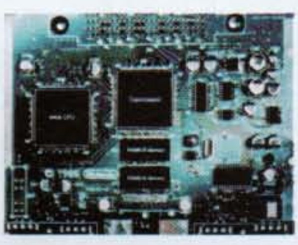


Was the Virtual Boy a console too far for Nintendo? (See letter from Stephen Virgo)

Q **1.** What is VESA, and how does it affect an SVGA accelerator?
2. What is a 64bit PCI DRAM/VRAM graphics card?
3. I'm considering buying a PC-TV tuner, but the ones I've seen in action just use a tiny, irritating box filling up to a third of the screen. Can you buy one with a fullscreen display?
4. I'm also considering the Internet, but I'm not entirely sure of the costs.
5. What are IPX and NetBIOS? I'm aware that you use them in order to play multiplayer games over the Internet, but how can you connect yourself up to IPX and NetBIOS?

Dominic Pettifer, Norfolk

A **1.** VESA stands for Video Electronics Standards Association, and was the first type of local bus graphics standard. It enables your graphics card to operate at the same speed as your internal bus.
2. A 64bit PCI graphics card is the fastest standard card that is available. It operates using a PCI (Peripheral Component Interconnect) bus that is superior to VESA. Every video card requires its own RAM. DRAM is the slowest, VRAM is faster.
3. PC-TV tuners are notoriously bad. There is no single unit that fulfils all your needs at the moment. Fujitsu/ICL's advertised PC-TV is a step in the right direction but the screen is still smaller than a portable's.
4. Hooking up to the Internet means buying a modem and then subscribing to a service provider, which will charge you a regular fee. Shop around to find the best deal (check out *.net* magazine for more information).
5. IPX stands for Internetwork Packet Exchange, and NetBIOS stands for Network Basic Input/Output System. They are protocols used by networks to communicate with each other.



Simon Westcott wants to know about the NU64's HDTV mode (motherboard, above)

Q **1.** In **Edge** 25, the provisional Ultra 64 specs stated that the two highest resolution modes (1024x768 and 1280x1024) are for HDTV only. Would a visual image in these modes lose any clarity on my PAL TV?
2. After the release of some Saturn games with borders, does this mean that Nintendo will release the U64 in the UK next spring with border-ridden games?

Simon Westcott, Axminster

A **1.** HDTV signals will not be able to be decoded by your normal PAL TV.
2. Only a few PAL Saturn and PlayStation titles suffer from the problem of large black borders – most are optimised to run at a similar speed to the NTSC versions and that means a small, albeit noticeable border. Nintendo has traditionally ignored this issue, but it would be foolish to allow PAL NU64 titles to suffer from the same drawbacks. Particularly when the machine will be powerful enough to cope.

Q and A

You can depend on Edge to cut through the technobabble and give you straight answers. You can write to us at Q&A, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW. Alternatively, fax us on 01225 338236, or e-mail us at edge@futurenet.co.uk.

Edge regrets that it can't answer questions personally, by phone, post or e-mail.

next **month**



Edge infiltrates Sega's AM3 coin-op division – the rising star of the Japanese coin-op industry. As well as a detailed analysis of the work undertaken on the Saturn conversion of *Sega Rally*, **Edge** will bring an exclusive report on its arcade successor – the forthcoming *Manx T.T.* bike racing game. Plus, **Edge** has an extensive report from the Tokyo JAMMA show where visitors glimpsed the latest cutting edge arcade games.



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